

JPRS-UNE-86-001

3 NOVEMBER 1986

USSR Report

NATIONAL ECONOMY

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NATIONAL ECONOMY

CONTENTS

ECONOMIC AFFAIRS

ECONOMIC POLICY, ORGANIZATION, MANAGEMENT

- Statutes on Intraenterprise Economic Accountability
(EKONOMICHESKAYA GAZETA, Nos 38, 39, Sep 86)..... 1

INVESTMENT, PRICES, BUDGET, FINANCE

- Impact of Gosbank Credit Policy on Economy Assessed
(EKONOMICHESKAYA GAZETA, Nos 35, 36, Aug, Sep 86)..... 46
- Increasing Bank Influence on Economy, by V. V. Dementsev 46
Weakening Payment Rate, by S. Vereshchagin 53

INDUSTRIAL DEVELOPMENT, PERFORMANCE

- Gosplan Expert Analyzes Production Capacity Utilization
(G. Prokofyev; PLANOVoyE KHOZYAYSTVO, No 8, Aug 86)..... 56

CONSUMER GOODS, DOMESTIC TRADE

FOOD PROCESSING, DISTRIBUTION

- Greater Autonomy in Kolkhoz, Sovkhoz Trade Services Noted
(Aleksandr Ivanovich Iyevlev Interview; SELSKAYA ZHIZN,
19 Jul 86)..... 61

New Developments in Use of Milk Substitutes Examined (V. S. Gordeziani; MOLOCHNAYA PROMYSHLENNOST, No 8, Aug 86).....	65
---	----

GOODS PRODUCTION, DISTRIBUTION

Statistical Analysis of Retail Trade Profits (I. Belyayevskiy; WESTNIK STATISTIKI, No 8, Aug 86).....	70
Moscow Firm Coordinates Efforts To Produce Quality Coats (N. Pokorskaya; SOTSIALISTICHESKAYA INDUSTRIYA, 7 Jun 86)...	82

ENERGY

FUELS

Azerbaijan Oilfield Workers Report 1986 Commitments (AZERBAYDZHANSKOYE NEFTYANOYE KHOZYAYSTVO, No 2, Feb 86).....	86
---	----

PIPELINE CONSTRUCTION, OPERATION

Methods for Moving Oil From Deep Caspian Fields Studied (F. A. Mamedov, et al.; AZERBAYDZHANSKOYE NEFTYANOYE KHOZYAYSTVO, No 3, Mar 86).....	98
--	----

HUMAN RESOURCES

LABOR

Study of 'Moonlighter' Work Style Discussed in Interview (S. A. Karapetyan Interview; IZVESTIYA, 15 Apr 86).....	105
New Decree on Work Regulations for 'Moonlighters' (N. Ryzhkov; SOBRANIYE POSTANOVLENIY PRAVITELSTVA SOYUZA SOVETSKIKH SOTSIALISTICHESKIKH RESPUBLIK (OTDEL PERVIY), No 23, 1986).....	111

EDUCATION

Higher Education Official on VUZ Entry Exam Results (F. Peregodov Interview; IZVESTIYA, 4 Aug 86).....	114
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ECONOMIC POLICY, ORGANIZATION, MANAGEMENT

STATUTES ON INTRAENTERPRISE ECONOMIC ACCOUNTABILITY

Moscow EKONOMICHESKAYA GAZETA in Russian Nos 38, 39, Sep 86

["Slightly abridged" republication of the "Basic Principles of Internal Economic Accountability of Production Associations (Enterprises)": "Economic Accountability Within the Production Unit"]

[No 38, Sep 86, pp 14-16]

[Text] EKONOMICHESKAYA GAZETA (No 25) reported that USSR Gosplan had sent to ministries and departments and councils of ministers of union republics the "Basic Principles of Internal Economic Accountability (khozraschet) of Production Associations (Enterprises)," drafted pursuant to the decree of the CPSU Central Committee and USSR Council of Ministers entitled "On Widespread Dissemination of the New Methods of Conducting Economic Activity and on Strengthening Their Impact Toward Acceleration of Scientific-Technical Progress" and cleared with USSR Minfin, USSR Goskomtrud, the USSR Central Statistical Administration, the USSR Academy of Sciences, and the AUCCTU. But these elaborations of methods, as the mail received by the editors shows, have not yet reached many enterprises and organizations highly interested in intensification of economic accountability. In this connection V. Kosarev of Kropotkin in Krasnoyarsk Kray, B. Gutsaylo of the Moscow area, A. Shirnyak of Ternopol, N. Savchenko of Volgograd, and many, many other readers have asked that these Basic Principles be published in this weekly.

Responding to the numerous wishes of readers, the editors are hereby publishing the text of these Basic Principles (with slight abridgments).

The features of the organization of economic accountability within the production entity must be taken into account in the respective sectoral principles which will be the basis for every production association (enterprise) to draft its own principles, which would take into account the particular features of internal subdivisions under the specific conditions and would state the method of organizing economic accountability in detail to fit that context.

1. Bases of the Organization of Economic Accountability in the Production Unit

A. Basic Organizational Principles of Economic Accountability in the Production Unit

1.1. Internal economic accountability (vnutriprouizvodstvennyy khozraschet) is an organic part of the economic accountability of the production association (enterprise) and embraces the system of economic relations of structural subdivisions--production units, shops, departments, services, sections, and brigades--with the association (enterprise) and with one another.

1.2. Internal economic accountability is aimed at performing the following basic tasks:

i. motivation of work collectives and individual workers to fulfill planning targets and discharge contractual obligations to the consumer, extensive use of the advances of scientific-technical progress in production, updating of products and improvement of product quality, reduction of production cost, growth of profit and labor productivity, efficient use of productive capital, as well as their accountability for the results of their performance;

ii. development of the initiative of work collectives and individual workers in discovering and utilizing unused potential within the production unit and in raising production efficiency.

1.3. Internal economic accountability is based on the following principles:

i. combining centralized planned management by the association (enterprise) as a whole with a certain independence in business operations on the part of each structural subdivision;

ii. optimum utilization of labor, physical, and money resources on the basis of comparative measurement of their actual expenditure to results previously achieved and also to the established quotas, allowances, and planning targets;

iii. financial and nonfinancial incentives to achieve high end results in raising production efficiency;

iv. economic accountability for oversights in the conduct of operations and for breaches of obligations in economic accountability.

1.4. Implementation of the principles of internal economic accountability presupposes the following:

i. regulation of the rights and duties of each subdivision; the granting to subdivisions of the necessary independence in the conduct of business operations as to the maneuvering of production resources, selection of ways of fulfilling planning targets and mobilization of unused potential within the production entity;

- ii. commitment of the necessary productive capital to the subdivision;
- iii. the drafting for each subdivision of a system of progressive technical-and-economic quotas and standard allowances for planning, recordkeeping, monitoring, economic evaluations, and stimulation of economic activity;
- iv. assignment of sound planning targets to subdivisions guaranteeing performance of tasks facing production associations (enterprises) as a whole;
- v. organization of a reliable system of recordkeeping on the results of economic activity and of monitoring the use of all productive resources;
- vi. creation of a system of economic liability of subdivisions for material loss inflicted on the association (enterprise) or other subdivision;
- vii. creation of a system of financial and nonfinancial incentives for work collectives of subdivisions which takes into account the contribution of each of them to the results of the activity of the association (enterprise) as a whole;
- viii. organization of socialist competition of subdivisions and of individual workers.

These topics must be reflected in the principles of internal economic accountability drafted in production associations (enterprises).

1.5. It would be advisable to include the following in the principles of internal economic accountability of specific production associations (enterprises):

- i. the general principles of internal economic accountability along with a detailed exposition of the rights and duties of subdivisions;
- ii. the mix of planning and success indicators, methods of working them out, and also the procedure of their assignment and amendment;
- iii. a system for regulating mutual relations in economic accountability between the association (enterprise) and its subdivisions and also among the subdivisions, the procedure for substantiating claims in economic accountability and the way they are to be reflected in economic results;
- iv. the procedure for formation and use of the wage fund and economic incentive funds of subdivisions;
- v. the procedure for recordkeeping, analysis, and appraisal of the results of economic activity of subdivisions;
- vi. and other matters requiring specific treatment with respect to the conditions and peculiarities of the production association (enterprise).

1.6. The improvement of economic accountability within the production entity must be combined with improvement of the entire system for the organization of production, the organization of work, and the organization of management of the production association (enterprise). That is why this effort must as a rule be made in accordance with a comprehensive plan and culminate in the approval and adoption of the regulation on economic accountability within the production entity.

It is wise to make provision for appropriating adequate resources to perform the measures of introducing and improving economic accountability in the production entity. There must be financial and nonfinancial incentives for those who actually carry out these measures.

The study of the organizational principles of internal economic accountability must be an integral part of the system of economics education of the workers. Collective and individual proposals for strengthening internal economic accountability and for improving the way it is organized must be constantly summarized and carried out in the practical effort.

1.7. It would be wise to begin the job of improving economic accountability in the production entity by analyzing and appraising the following:

- i. the organizational structure of management of the association (enterprise);
- ii. the rights and duties of structural subdivisions;
- iii. the impact of the specific nature of the activity of the structural subdivisions on performance of the indicators broken down to the level of the association (enterprise);
- iv. the condition of the body of norms, quotas, and standards;
- v. operational-production planning;
- vi. the system of financial and nonfinancial incentives;
- vii. the system of financial liability;
- viii. the system of accounting and reporting.

1.8. For the purpose of organizing the effort to improve internal economic accountability and to guarantee that it functions effectively it would be advisable to create in the association (enterprise) a commission¹ headed by the deputy general director (director) for economic affairs or the director, including representatives of public organizations, which would be assigned the following functions:

- i. preparation of documents on methods and normative documents concerning the organization of internal economic accountability;

- ii. coordination of the activity of staff services and departments toward intensifying and improving internal economic accountability;
- iii. organizing regular monitoring of progress in carrying out measures to improve internal economic accountability;
- iv. clarification and popularization of the new methods of economic activity and of progressive know-how;
- v. nomination of workers for incentives who have achieved good and timely performance of the measures to introduce internal economic accountability;
- vi. decisionmaking concerning claims in internal economic accountability;
- vii. examination of monthly, quarterly, and annual indicators for the activity of the associations' (enterprises') subdivisions with respect to economic accountability and preparation of decisions concerning their performance;
- viii. submittal of recommendations for incentives to be awarded to the managers of subdivisions for the approval of the general director (director);
- ix. preparation of recommendations jointly with the trade union commission for production agitation concerning financial and nonfinancial incentives for the collectives of winners in socialist competition within the association (enterprise).

It would also be wise to create commissions in production units and shops for conducting this effort within the limits of the respective subdivision.

B. Particular Features of Economic Accountability of Subdivisions at Various Levels

1.9. The forms and methods of implementing the principles of economic accountability within the production entity are to be given specific form in each subdivision so as to take into account the subdivision's organizational and technical peculiarities and its place in the production process and in the organizational structure of management.

The following basic organizational subsystems are accordingly distinguished in the system of economic accountability within the production entity:²

- i. economic accountability of production units;
- ii. economic accountability of the shops of the principal production operations;
- iii. economic accountability of the shops in the auxiliary production operations;
- iv. economic accountability of brigades and sections;

v. economic accountability of functional, technical, and commercial departments (administrations) of the management structure and staff services.³

The following organizational forms of economic accountability are distinguished so as to take into account the place of production subdivisions in the division of labor within the production entity and the nature of their specialization:

- i. economic accountability of FINAL product-specialized subdivisions which complete the cycle in manufacturing a product that is delivered outside the production association (enterprise);
- ii. economic accountability of technologically specialized subdivisions involved in INTERNAL COOPERATION and which deliver products or render technological production services within the framework of cooperation within the production entity;
- iii. economic accountability of subdivisions of the MIXED type producing both an end product and also a product delivered in the framework of internal production cooperation;
- iv. economic accountability of AUXILIARY SUBDIVISION which supply work stations with tools, jigs and fixtures, transport, and energy, which repair and service equipment, and so on.

The peculiarities inherent in each subsystem and in the organizational form necessitate differences in the system of planning and success indicators, in the procedure for planning and norm-setting, in recordkeeping and evaluation of the performance of subdivisions, in the forms and methods of regulating mutual relations in economic accountability, in economic accountability and incentives, etc.

1.10. The specific features of the accountability of production units are determined by their position in the organizational structure as the basic component of production associations.

The basic peculiarity in the economic accountability of production units is that the relations of economic accountability embrace not only the stages in the product's production, but in a number of cases the spheres of distribution (the product's shipment and sale), of material and technical supply, etc., as well.

At the same time the geographic distance of the production unit from the headquarters of the management of the association and from other production units and the number and complexity of relations with suppliers and consumers are taken into account. This imposes the level of centralization of functions with respect to the supply of materials and equipment, product sales, the procedure for settlement with suppliers, with consumers, with bank institutions, and with financial authorities.

The following are recommended for purposes of organizing effective financial accountability of production units:

- i. placement of production units, above all those which are large and are geographically remote, on separate (internal) balance sheets;
- ii. reflection of the condition and movement of fixed and working capital assigned to the production unit and also of economic processes in the accounts which the association opened in the framework of the scheme of accounts in the bookkeeping records established under Order No. 40 of the USSR Ministry of Finance on 28 March 1985;
- iii. transfer of funds to the current account of production units (opened in the institution of USSR Gosbank where they are located) as a function of their performance of the product delivery plan in accordance with contracts concluded and also in view of the inflow of money into the settlement account (or corresponding subaccount) of the association for product shipped.

The economic accountability of FINAL production units must be aimed at fulfillment of state planning targets of the association and obligations with respect to deliveries of its products under contracts, and also at improving product quality and achieving a high level of utilization of production resources.

The economic accountability of production units involved in INTERMEDIATE PRODUCTION must guarantee the meeting of the deadlines which have been set and the assortment of the products produced in accordance with the internal schedule for deliveries to related subdivisions, improvement of product quality, efficient use of productive resources, while that of production units of the MISCELLANEOUS type must ensure achievement of the goals enumerated above as well as achievement of the equal profitability in manufacturing products which go outside the association and those which are consumed within it. Production units receive at their own disposition a portion of the association's material incentive fund and a portion of its fund for social welfare and cultural measures and housing construction, and also, subject to the specific conditions, a portion of the production development fund and other economic funds formed within the association, and they bear economic accountability for breaches of obligations in the system of economic accountability pursuant to the procedure set forth in Section 4 of the present Basic Principles.

1.11. The basic peculiarity of the economic accountability of shops in the BASIC and AUXILIARY PRODUCTION OPERATION is that the relations in economic accountability embrace only the stage of the production process proper.

The economic accountability of the shops in the basic production operation must be aimed at a smooth pace in output of products in the given day and in the deadlines set in the schedule, a rise of labor productivity, reduction of labor intensiveness and materials intensiveness, and improvement of product quality.

The economic accountability of the shops in the auxiliary production operations must be aimed at reducing the production cost of operations while at the same time they fully and competently meet the needs of the basic production operation for their services.

A portion of the resources of the material incentive fund of the production unit (in accordance with the procedure set forth in Section 3 of the present Basic Principles) must be transferred to the shops of the basic and auxiliary production operations, and their financial accountability must be established for fulfillment of obligations in economic accountability (in accordance with Section 3 of the present Basic Principles).

1.12. Depending on the specific features of the production operation and the way planning and reworking on use of physical inputs is organized, the PRINCIPLES OF ECONOMIC ACCOUNTABILITY IN BRIGADES (COLLECTIVES) may be realized either in its entirety or partially (individual elements). In this connection brigades (sections) subject to economic accountability should be assigned standard rates of consumption of raw materials, supplies, and tool and other resources whose use depends directly on their activity, and they should be given incentives for the conservation of these resources.

As a rule it is recommended that bonuses for the results achieved by the brigade be awarded to the collective of the brigade as a whole, and then distributed among the members of the brigade so as to take into account each member's individual contribution to the results achieved using the coefficient of work participation ratio.

1.13. Under present conditions the functional subdivisions of the production association (enterprises, production units—departments and services—must have a definite impact on the application of new equipment and processes, on the improvement of the quality of the product produced, on reduction of its production cost, and on the rise of labor productivity. This constitutes their direct participation in achieving the basic end results of the activity of the production association (enterprise). Application of the principles of economic accountability in organizing their effort is a mandatory condition for the effectiveness of the system of economic accountability within the production entity as a whole.

The specific nature of applying the principles of economic accountability to the operation of functional subdivisions results from the specific nature of their managerial activity. The level of performance of the production management functions assigned them depends not only on the volume of work performed and level of outlays in maintaining the departments themselves, but also to a considerable extent on the formation of the results (vector) both of their functionally subordinate production subdivisions and also the association (enterprise, production unit) as a whole.

Application of the principles of economic accountability and functional subdivisions accordingly necessitates the following:

i. clear and straightforward definition of the tasks, duties, limits, and forms of accountability of each functional subdivision;

ii. use of a specific system of economic accountability indicators in planning and stimulating the effort of functional subdivisions which makes it possible to objectively appraise the effectiveness of the most important functions in production management which they perform (see Section 3 of the present Basic Principles);

iii. organization of the planning and stimulation of the activity of functional subdivisions so as to take into account the influence they have on a change of the results (costs) of their functionally subordinate production subdivisions and of the association (enterprise, production unit) as a whole.

1.14. The COLLECTIVE CONTRACT, whereby an agreement regulating mutual obligations is concluded between the subdivisions and the management, is a progressive form in the organization of work on the principles of economic accountability. The contract states the volume of output, list of products (jobs or services), manufacturing deadlines, and the quality and production cost, conditions for remuneration, the organization of supply, etc.

The collective contract presupposes the following:

i. clear definition of the end results of the collective's effort in quantitative and qualitative indicators;

ii. the necessary independence granted to the collective in selecting the specific forms of the organization of its own work, in utilizing the equipment and other technical resources assigned to it, and in the distribution of the collective earnings;

iii. the conditions of remuneration which guarantee payment to the collective operating under the conditions of the contract of the allowed total wages and bonuses for performance of the assigned volume of production (work units) in the necessary mix and to the necessary quality standard and meeting other indicators regardless of the labor inputs actually required or the number of workers;

iv. mutual accountability of the collective and the management for fulfilling the conditions of the contract, which are determined by the agreement embodied in the contract and also by the systems of planning, recordkeeping, material incentives, and liability in effect within the production entity.

The contract collective may be made up of basic and auxiliary workers, engineering and technical personnel, and employees provided the result of their collective effort is represented by a finished product or by a completed part of it.

The Organization of Planning

1.15. The activity of production subdivisions is planned on the basis of a system of prospective (5-year), current (annual, quarterly, and monthly), and operational plans.

Annual plans, with the targets broken down by quarters, are compiled on the basis of the assignments of the 5-year plan for the respective year, economic norms, and the production program of the association (enterprise) formulated as to take into account business contracts concluded with consumers.

Monthly plans are compiled on the basis of the assignments of the quarterly plan.

Operational plans on a calendar basis serve the purpose of ensuring uninterrupted synchronization of the efforts of all the internal subdivisions.

1.16. Prospective and current plans are worked out on the basis of the draft plan (reference figures) and technical-and-economic norms broken down in ample time to subdivisions. In the course of staging socialist competition the work collectives of subdivisions assume counterobligations according to the untapped internal potential that has been discovered, and these are taken into account in adoption of planning assignments.

1.17. The planning assignments given to subdivisions may be amended within the specified period of time only by that management entity (official) authorized to establish them in the first place. All changes must be delivered to the subdivision in writing along with indication of the reasons for the changes. A change in the planning assignment with respect to one indicator must be linked to all the other indicators that have been assigned.

1.18. The structure, content, and forms of the technical-and-economic plans are to be worked out in associations (enterprises) for the subdivisions (production units, shops, sections, and brigades) so as to take into account the norms and methods recommended in sectoral principles for drafting the technical, production, and financial plan of the production association (enterprise) and recommendations concerning the planning and recordkeeping of indicators in economic accountability as set forth in Section 2 of the present Basic Principles.

1.19. Technical-and-economic indicators, which are broken down into those which are assigned, those which are computed, and those used in evaluation, are the basis for planning and evaluating the performance of the subdivisions of the association (enterprise).

The ASSIGNED INDICATORS are mandatory and serve as the basis for evaluating the performance of subdivisions.

The COMPUTED INDICATORS are used to substantiate the indicators assigned, to analyze factors affecting fulfillment of the mandatory assignments, and to discover and utilize unused internal potential.

The PERFORMANCE INDICATORS reflect the basic requirements placed on the structural subdivisions, and they are used to evaluate the results of their production-and-economic activity, to form the wage fund and economic incentive funds, to determine the scale of bonuses, and also in totaling up the results of socialist competition.

Recommendations with respect to the mix of indicators and also the methods basic to planning and recording fulfillment have been set forth in the light of the specific nature of production subdivisions at various levels of management in Section 2 of these Basic Principles.

D. Organization of the System of Quotas and Standard Rates and Allowances

1.20. The system of quotas and standard rates and allowances (normy i normativy) consists of an integrated set of scientifically sound work quotas and physical and financial allowances and rates, the procedure and methods of their formation, updating and use in connection with the drafting of prospective and current plans.

It is the basis for planning, regulating, and monitoring the performance of structural subdivisions, for measuring the costs they incur against the results achieved, for delineating the responsibility for the results of activity among the subdivisions, and for objective evaluation and stimulation of their performance.

1.21. The system of quotas and standard rates and allowances of the association (enterprise) is organized in accordance with the basic methodological principles set forth in the System of Progressive Technical-and-Economic Quotas and Standard Rates and Allowances, approved by USSR Gosplan 11 January 1980, and in other normative acts drafted to elaborate that system.

In addition, economic accountability within the production entity is organized on the basis of extensive application of the following stable economic standards:

- i. standard units of measurement of the volume of output (internal prices within the production entity, normative net output (NChP), NSO [normative value of processing], the standard wage, quota-hours, etc.;
- ii. rates of formation of the wage fund and incentive funds.

Recommendations on methods concerning their formation and application are contained in the respective sections of the present Basic Principles.

1.22. Planning-computation prices (planovo-raschetnyye tseny) are used in the planning and recordkeeping of expenditure of material resources in the subdivisions of the association (enterprise).

By planning-computational prices are meant a stable measurement of value used to appraise raw materials and supplies, finished products and intermediate products whether purchased or produced internally, services and work units of

the auxiliary production operation in computing the planned and actual production cost of the product of consumer subdivisions in order to delineate responsibility for costs among subdivisions.

The planning-computation prices are computed as follows:

- i. for purchased finished products and intermediate products--on the basis of wholesale prices adjusted for relevant supplements, discounts, and shipping and preparation costs;
- ii. for waste--on the basis of wholesale prices for waste adjusted for the type of waste and its technical characteristics;
- iii. on products and services furnished internally--on the basis of the planned or standard production cost of manufacturing the product (rendering the services), including costs which depend on the given subdivision.

1.23. In order to ensure that collectives of subdivisions are motivated to discover untapped internal potential, it is advisable that the standard rates of consumption and allowances be reviewed according to the following procedure:

- i. a general review would be conducted annually before drafting the plans of the production association (enterprise) and of the subdivisions, and they would at the same time be brought into conformity with the reference figures (the draft plan);
- ii. the standard rates would be reviewed in connection with the performance of organizational and technical measures to bring in new equipment and manufacturing processes and to improve the organization of production and the organization of work;
- iii. the standard rates are not subject to revision during the reporting year if the saving on them has been achieved through the initiative and creativity of the subdivision's collective.

1.24. In order to guarantee the effectiveness of economic accountability within the production entity it is indispensable that the standard rates and allowances, along with the corresponding level of detail and adjustment for specific conditions, be broken down not only to production units, shops, departments, and services, but even to brigades and individual workers.

1.25. Functions involved in drafting, updating, and checking the quality of the standard rates and allowances must be performed by the technical and economic departments of the management structure, which would call upon the relevant staff services of subdivisions and the computer center.

The computer center would format reference information on standards in the context of the functioning of the ASUP and would keep these records, update them, and store them.

A list of the subdivisions responsible both for drafting and also for approval of regulations of standard rates and allowances must be given in the regulations on economic accountability of individual associations (enterprises).

1.3. Organization of Recordkeeping

1.3.1. Recordkeeping in the context of economic accountability within the production entity must see that information is received that is necessary for the prompt making of management decisions related to the following:

a) identification of distortions and disproportions in the production process, identification of losses in production or inefficient use of physical, labor, and financial resources, and also related to reinforcement and dissemination of the results achieved;

b) assessment of the contribution of the collective of each subdivision to the results achieved in the work of associations (enterprises).

1.3.2. Recordkeeping in subdivisions is based on optimum combination of primary documents, accounting, and statistical records, which guarantees comprehensive reflection of the results of economic activity.

Primary recordkeeping and reporting are organized in accordance with the normative documents in effect, including mandatory use of interdepartmental and standard forms of primary and report documents as approved by the USSR Central Statistical Administration and the USSR Ministry of Finance.

1.3.3. The basic requirements in organizing recordkeeping in the context of economic accountability within the production entity are as follows:

I. Recordkeeping must be up-to-date and economical and must afford the possibility of exerting a managerial impact on the phenomena and processes recorded throughout the entire production cycle;

II. The data in records must afford the possibility of delineating responsibility among the subdivisions for the results of their operation;

III. The data used as the basis for taking decisions on evaluation of the performance of subdivisions and their incentives must be reliable and must be confirmed by the signatures of the relevant officials.

1.3.4. Operational and statistical records are kept right within the subdivisions, and they also provide for the collection, recording, and processing of information, specifically on the following:

a) on output (performance of work items, rendering of services) by the categories in the nomenclature;

b) on the meeting of deadlines for production and delivery of products (performance of jobs); on the quality of the product (services, jobs);

iii. on the size of the labor force; on the labor intensiveness of the product (services, jobs);

iv. on use of production equipment (productive capacities);

v. on fulfillment of plans of organizational and technical measures and on application of new technology.

1.30. Accounting is done by the respective subdivisions (individual workers) of the staff service of the main (senior) bookkeeper or by workers so authorized, and using the methods and equipment available they collect, record, and process information in money terms on the following indicators of the economic activity of subdivisions: expenditure of the wage fund; production costs, including use of all types of physical resources, special tools and jigs and fixtures; processing losses, losses from rejects, and other unproductive expenditures; stocks of raw materials and supplies in the warehouses of the association (enterprise) and of the subdivisions, including work in process.

The staff of the bookkeeping department must ensure methodological compatibility of all types of records which together with bookkeeping records comprise the system of production records that guarantees strict monitoring of the purposiveness and efficiency of utilization of production resources in shops, sections, brigades, and at individual work stations.

1.31. It would be wise to organize the keeping of records on production costs by the normative method, speedily detecting deviations from the standards and grouping them by the places of their occurrence, causes, and those responsible. Information on deviations must be furnished in good time to all interested subdivisions so that they can prevent (reduce) the adverse consequences of the deviations. For that purpose a system of classification of the most typical deviations must be worked out in the association (enterprise).

If the processing of bookkeeping information is centralized in the production association (enterprise), then the conditions must be created for it to be supplied in good time to the subdivisions on the basis of a ramified information network using minicomputers and main-frame computers which must be supplied to all the subdivisions of the enterprise.

Particular attention must be paid to organizing the keeping of records on costs in brigades and at work stations. Along with the standard forms of the primary documents (job orders, requisitions for materials, and so on), brigade (personal) accounts of conservation and efficiency should be used for this purpose; the data they contain must be used in evaluating the performance of the brigade and in totaling up the results of socialist competition.

The keeping of records on production costs by brigade must be done under the supervision as to methods and oversight of the accounting department.

In organizing the normative method of keeping records on costs in the association (enterprise) guidance should be taken from the Standard Instructions on Use of Normative Recordkeeping on Production Costs and Calculation of the

Normative (Planned) and Actual Production Cost of Products (Work Items), approved by letters of USSR Minfin, USSR Gosplan, USSR Goskomsen, and the USSR State Statistical Administration (No 12, 24 January 1983).

1.32. In order to monitor the preservation and correct use of parts (workpieces) it is advisable to discover hidden rejects and losses of parts and intermediate products. It would be advisable for items to be transferred from the warehouse to the shop (section), to work stations, and also from one shop (section) to another on the basis of weight and count, which must faithfully be reflected in the documentation. In order to guarantee the correct keeping of records on the movement and safekeeping of inventories warehouse rooms and storage rooms must also be appropriately equipped (weighing devices, recording devices, measured containers, and so on). In production shops the preservation and proper use of inventories must be monitored by means of reflection in the physical reports of the shops and by their actual existence (expenditure) in a comparison with the established standard rates and allowances of consumption.

1.33. The preservation of intermediate products and parts in work in progress must be monitored on the basis of regular inventories in the shops and at work stations, followed by the compiling of a physical balance.

Wherever possible and advisable, above all in the food industry, the meat and dairy industry, and certain branches of the chemical industry, specific physical balances should be kept in order to record and monitor the movement and preservation of inventories in production and also to monitor the yield of the product (on alcohol, fats, starches, sugar, etc.), which should conform to the procedure envisaged in sectoral instructions on planning, recordkeeping, and planning of the production cost.

1.34. On the basis of the results of recordkeeping every subdivision submits a report on its production and economic activity on the forms established in the association (enterprise). The indicators on the report should be arranged by descending order of their importance.

The report must contain analytical computations and reference material making it easier to quickly take the necessary management decisions. The report information may be presented not only in the traditional form of tables, but also in the form of graphs, charts, and mathematical computations.

Figures on the performance of subdivisions should be given in reports both for the respective month (quarter) and also in the cumulative total from the beginning of the year.

F. Organization of Economic Analysis and Evaluation of Performance

1.35. Economic analysis in the context of economic accountability within the production entity serves the purpose of discovering the nature of the production and economic processes and phenomena taking place, of establishing their cause-and-effect relationship and development trends, and discovering on that basis the shortcomings and unused production potential that exists.

1.36. In the planning stage economic analysis is done in order to examine the soundness of plans, to equalize the level of their stringency, to discover bottlenecks and potential for intensification of production, and to prepare them in planning assignments.

In the stage of operational planning economic analysis is done in order to discover and prevent deviations from planning assignments and thereby to create conditions for plans to be accurately fulfilled on time.

In the stage of summing up the results of economic activity economic analysis is used to discover and make quantitative assessment of the fully completed work of the subdivision to the end results of the activity of the association (enterprise) as a whole, and to discover the causes of fulfillment of the plan and to determine those responsible. Thanks to economic analysis the information necessary for objective evaluation of the results of activities of structural subdivisions and of their sound material incentives is furnished to the economic accountability commission of the association (enterprise, production unit).

1.37. The following are the basic organizational prerequisites of economic analysis in the production association (enterprise):

- i. involvement of functional departments and staff services in the management of the association (enterprise) in conducting the economic analysis;
- ii. clear delineation of duties and responsibilities for conducting the economic analysis and their assignment in the regulations on the management of departments and staff services;
- iii. compilation of the plan for analytical work, including definition of the range of topics studied, the intervals at which they are studied, time and procedure for use of the results of the analysis in making management decisions;
- iv. development of methods for conducting economic analysis within the economic entity so as to take into account the sectoral, organizational, and technical-and-technological peculiarities of the particular association (enterprise);⁴
- v. the working up of standard analytical tables to be used in conducting current economic analysis of the results of the economic activity of subdivisions;
- vi. involvement of a broad range of personnel in various specialized roles in the analytical work along with clear delineation of their respective duties and the setting of a specific task for each participant.

1.38. Preplanning economic analysis must precede the drafting of the annual plans of subdivisions. The individual analytical computations are made during the drafting of the plan in order to substantiate its individual sections and indicators. Preplanning analysis is conducted by all those responsible for carrying out the plan who are involved in drafting the respective assignments of

the plan. The respective planning-and-economic services coordinate the efforts of conducting the preplanning analysis.

It is recommended that an operational analysis be conducted above all in a breakdown by performance indicators and factors influencing their fulfillment in each specific subdivision. Those principally responsible for doing this would be the departments (individual workers) whose duties include the day-to-day scheduling of work operations during which the respective performance indicators are worked up.

Current analysis in order to evaluate the results of activity of the subdivisions must precede examination of the results of their work by the economic accountability commission of the association (enterprise, production unit).

1.39. It is recommended that analysis and evaluation of the results of work be conducted according to the following scheme:

STAGE 1. Analysis of the activity of subdivisions, which is conducted by the subdivisions themselves within the established intervals in standard analytical tables which have been centrally developed and approved by the association (enterprise).

STAGE 2. Economic analysis within the economic entity conducted at established intervals by the functional staff services, which call upon the personnel of subdivisions, on the basis of the data of the standard tabular analysis and also using a number of additional figures.

The results of the economic analysis takes the documentary form of reports or explanatory notes, which contain a descriptive section and appendices (standard analytical tables). The descriptive part contains a brief description of the subdivisions analyzed, figures on the strenuousness of the plan and on its fulfillment, on the influence of various factors on the most important indicators, and an evaluation is made of the operation of structural subdivisions, conclusions are drawn and recommendations offered concerning elimination of shortcomings in operation and for the fullest utilization of untapped internal potential.

STAGE 3. Summing up the results and evaluation of the economic performance of subdivisions subject to economic accountability, which are done by the relevant economic accountability commission within a week from when it receives reports on the results of performance and the data of the economic analysis.

The economic accountability commission performs the following functions:

- i. it evaluates the performance of subdivisions over the reporting period;
- ii. it determines the size of the increase (decrease) from the plan of transfers to the economic incentive fund, the size of bonuses for engineering and technical personnel and employees, and in the relevant cases the size of the reduction or complete elimination of bonuses on the basis of the performance of subdivisions.

The decisions of the commission on these matters are approved by the general director of the association (enterprise) subject to concurrence of the trade union committee of the association (enterprise).

STAGE 4. Discussion of the results of the economic performance of subdivisions and of socialist competition is conducted in meetings of the aktiv and work collectives.

2. Planning Fulfillment of the Performance Indicators of Production Subdivisions and the Keeping of Records on Fulfillment

A. The System of Indicators of the Production Subdivision

2.1. The system of assigned and performance indicators⁵ of subdivisions should be oriented toward guaranteeing the growth and fulfillment of the assigned and performance indicators of the activity of the production association (enterprise) as a whole, toward predominant use of intensive factors for the development of production, and toward increased production efficiency and observance of an economy regime.

2.2. The number of indicators used in economic accountability within the production entity as assigned and performance indicators must be minimal, but sufficient to ensure the coordinated activity of production subdivisions.

Moreover,

i. the system of indicators must comprehensively reflect the activity of the subdivision, must take into account all factors for increasing production efficiency which depend upon it and must thereby afford the possibility of objectively evaluating the contribution of the workers of subdivisions to the overall results of operation of the association (enterprise);

ii. the system of indicators of the subdivision must be linked to the assigned and performance indicators of the activity of the association (enterprise), must promote fulfillment of state planning targets, and must guarantee adherence to the interests of the workers, the interests of the association (enterprise) as a whole, and the interests of all society;

iii. the indicators must be comparable in their dynamic behavior for purposes of determining the rise of operating efficiency of the subdivisions and they must also be quantitatively commensurable;

iv. the indicators must be computed on the basis of the total volume of work done by the subdivision subject to economic accountability, so as to take into account both products (work items) intended for outside sale as well as those supplied as part of cooperation within the production entity.

2.3. The system of planning-performance indicators and economic norms of various subdivisions should be assigned so as to take into account their organizational and technical peculiarities and is distinguished by the mix of indicators, by the units of measurement, and by the methods of computation.

2.4. It is best to evaluate the performance of production subdivisions when the results of operation and supplier competition are being totaled up, those are according to fulfillment of planning targets for output (delivery) of products in accordance with the established product list (assortment) in the given volume and by the deadlines established for a specific consumer, and also with respect to fulfillment of assignments for reduction of production costs (growth of profit), the rise of labor productivity (reduction of labor intensiveness), and improvement of product quality and the technical level of production.

At the same time, in view of the specific character of the activity of auxiliary production operations, the results of tool and power, transport, and other similar subdivisions (shops, sections, and brigades) should be evaluated so as to take into account punctuality, continuity, and the quality of the service they render to related subdivisions in accordance with their needs, rather than take into account fulfillment and overfulfillment of production plans, since the output of these subdivisions (aside from operations and services for outside organizations) becomes a part of the production costs, and increasing them brings about a rise of the production costs (reduction of profit) in the basic production operation.

The operation of tool, machine repair, and other similar auxiliary subdivisions should be planned and evaluated in accordance with the criteria used in the subdivisions of the basic production operation.

8. Method of Computing the Principal Planning-Performance Indicators

2.5. Indicators reflecting the Product List (Assortment), the Volume of Output, and Product Quality

2.5.1. OUTPUT in physical terms (products list, assortment) is planned by all production subdivisions in the form of a list of specific articles (ware items, services) which the subdivisions must manufacture (perform) within the period being planned (year, quarter, month), along with an indication of their quantity (volume), the consumers and the deadlines for production, which are stated in detail in operating schedules (output schedules).

Actual output includes products (articles, assemblies, sets, parts, services, work items, etc.) delivered (accepted) to the consumer or to the warehouse on the basis of the appropriate documents.

If the subdivision which is the consumer discovers a defect in the product which has occurred through the fault of the subdivision which is the supplier, then these products must be excluded from the actual output of the subdivision that is the supplier, and the subdivision which is at fault for the defect must at the consumer's request produce additional output to cover the defect that has been found.

Figures on actual fulfillment of the output plan are used to compute the performance indicator of fulfillment of assignments (realizations) for production of products according to the products list and within the assigned time limits (see Point 2.5.7).

2.3.2. The VOLUME OF SALES is planned as a rule by the manufacturing production units (production units of the mixed type with respect to product deliveries outside) when a settlement (special loan) agreement of the association has been opened in an institution of Gosbank where the production unit is located.

The VOLUME OF OUTPUT SHIPPED is planned by manufacturing production units, by principal production shops (by those of the mixed type with respect to deliveries of their products to outside organizations) if they ship their products independently in accordance with business contracts concluded with consumers.

The volume of sales and the volume of output shipped are best used as indicators to evaluate fulfillment of obligations concerning product deliveries to outside consumers. Here the indicator is calculated according to the method established for the association (enterprise) to evaluate fulfillment of the sales plan adjusted for fulfillment of product delivery obligations.

2.3.3. The FINAL OUTPUT of the subdivision includes products, assemblies, sets of parts (work items, services) which have gone through the entire cycle of the manufacturing process in that subdivision and which meet the standards or technical specifications and are intended for delivery to other internal subdivisions or for product deliveries outside the association (enterprise).

In manufacturing production units and basic production shops the volume of final output corresponds in its composition to commodity output. In production units and basic production shops of the mixed type it includes both the volume of commodity output delivered to external organizations and also the volume of output delivered for internal cooperation.

The actual volume of final output includes products accepted by another internal consumer or delivered to the finished products warehouse (inter-shop warehouse).

2.3.4. In manufacturing production units and basic production shops the volume of final output is calculated so as to take into account the specific features of computing the volume of output of the particular branches of industry in terms of normative net output (NChP), the normative value of processing of product units in physical terms and is used in calculations of labor productivity and the wage fund.

Moreover, it is recommended that the NChP (NSh) be defined for the output of the given subdivision according to this formula:

$$NChPk = (NChP \times Z_k) / Z_p,$$

In which: NChPk--normative net output in that portion of the finished product (part, set, assembly) delivered to another production subdivision for further processing;

NChP--normative net output applied to finished output;

Zp--base wage of production workers applied to finished output;

Zk--base wage of production workers applied to the portion of the finished product.

2.5.5. The volume of final output is best calculated for production units and basic production shops of the mixed type and those involved in internal cooperation, auxiliary shops, sections, and brigades in terms of the standard wage or quota-hours--which are the units of measurement that reflect most reliably the labor intensiveness of the product's manufacture.

Moreover, these standards are taken as stable (fixed as a rule at 1 October of the year preceding the year being planned) and include the wage (labor intensiveness) of basic production workers, and if necessary that of auxiliary personnel as well, whose number is directly related to a change in the volume of production. The wage standards (quota-hours) may be changed during the year only if there is a change in the conditions of internal production cooperation.

2.5.6. The volume of final output in internal prices is determined in the production units and basic production shops for whom profit is planned and whose products wholesale prices have not been set in price lists.

The internal prices are determined on the basis of official formal estimations of planned production cost of the products, to which profit is added. The planned production cost must reflect the costs of that structural production subdivision itself. The profit included in the computation of the internal price is best determined by distributing the profit of the finished product in proportion to the wage of production workers of the subdivisions according to this formula:

$$P_{ts} = (q_{ts}/q) \times P_s,$$

in which: P_{ts} --profit of the subdivision included in the internal price of the portion of the finished product (part, set, assembly);
 P_g --profit in the wholesale price of the finished product;
 q_g --total wages of production workers in the production cost of the finished product;
 q_{ts} --total wages expended by the subdivisions in manufacturing the part of the finished product (part, set, assembly).

2.5.7. The FULFILLMENT OF ASSIGNMENTS (OBLIGATIONS) FOR OUTPUT ACCORDING TO THE PRODUCTS LIST AND TO THE DEADLINE SET (in the schedule) is taken as a performance indicator in all subdivisions (production units, shops, sections, and brigades) except manufacturing subdivisions in which evaluation is based on the percentage of fulfillment of the volume of sales adjusted for delivery obligations and in fuel and power, transport, and other similar auxiliary shops, sections, and brigades where the criterion for evaluating fulfillment of the output (services) plan is uninterrupted supply of the relevant product (service) to consumers and the absence of substantiated claims on their part.

This indicator is calculated according to this formula:

$$K = ((q_{pl} - q_{ad})/q_{pl}) \times 100,$$

in which: K --percentage of fulfillment of assignments (obligations) for output;

Opt--planned volume of final output;
Optd--size of the shortfall with respect to the products that will not
put which has not met the conditions for delivery to the consumer
delivery to the enterprise.

2.5.8. It is recommended that ENTERPRISE QUALITY (QUALITY OF WORK ITEMS OR QUALITY) be planned and recorded in terms of the following indicators:

i. the relative share of output in the superior-quality category relative to the total volume of finished output; the relative share of the products of improved quality and especially high-quality articles sold at negotiated prices (in light industry it is manufacturers' production units and basic production shops and subdivisions of the mixed type--with respect to the portion of the final output of the association (enterprise) sold outside, and of production units and shops involved in internal subcontracting (internal product certification exists in the association (enterprise));

ii. the volume of high-quality consumer goods in manufacturing production units and basic production shops and subdivisions in the mixed type with respect to that portion of the output of the association (enterprise) which is sold outside (in the branches of the final industry and the city and district industry);

iii. the quality grade ratings, selection of types and models, etc. given at suitable products, acceptance on the first delivery, and other optimum--in production units, shops, factories, and branches directed for sustained quality.

2.6. The indicator "MAXIMUM LEVEL OF COSTS OF FINAL COMMODITY OUTPUT" is best used as a planning-performance indicator for manufacturing production units and basic production shops in branches of industry in Group A, for which this indicator serves the formation of funds.

The maximum level of costs means the maximum allowed level of costs (established on the basis of the planned volume of investments and planned quality) which may not be exceeded either in terms of the absolute size of costs for the given product or in terms of its output in proportion (proportion) which do not correspond to those prescribed in the plan.

The maximum level of costs is determined by the ratio of the planned remuneration cost of final commodity output when the production unit (basic production shop) is supposed to produce divided by the value of that output.

The actual level of the maximum costs must reflect the difference between penalties paid and penalties received on the basis of fines in the context of economic accountability.

2.7. In the branches of industry in Group B, where profit is the indicator governing the formation of T-4s instead of the maximum level of costs per ton of commodity output, it is advisable to show the ENTERPRISE INCOME (the manufacturing production units and basic production shops, for these subdivisions

profit is defined as the difference between the volume of final (commodity) output in wholesale prices and its production cost.

It is also advisable to use profit as a performance indicator in branches of industry in Group B for production units involved in internal cooperation and also for subdivisions of the mixed type if the subdivision confronts the task of simultaneously increasing the volume of output, reducing costs, and improving product quality. If wholesale prices have not been set in price lists on the products produced by the subdivision, internal prices are worked out in accordance with the method set forth in Point 2.5.

If stimulation of a growth of output is not an urgent problem for the given production unit (shop), and it is indispensable to see that a given quantity of the end product is produced at minimum manufacturing cost, it is recommended that the production cost be taken as the indicator.

2.8. The indicator PRODUCTION COST, broken down as a planning-performance indicator to production units, shops, sections, and brigades may be established in the form of the production cost of the entire final output of the subdivision; the unit production cost of each product (article, part, assembly, set of parts, and so on); the cost of individual operations or conversions; the production cost of each order; or the advance estimate of production costs. When the production cost of products of production subdivisions is being planned, selection of the unit in the official formal calculation depends upon the peculiarities of the production process and the character of the conversion (preparatory, processing, finishing, final manufacturing), the role of the subdivisions in the system of production (basic or auxiliary), and also the pattern of the organization of production in the subdivision (large-scale, series, or single-piece production).

The unit of output used in the formal calculation must correspond to the physical unit of measurement adopted for planning its output in quantitative terms as well as indicators designated in technical specifications, standards, and price lists.

The production cost of the output of the subdivision should include only those costs whose formation its work force can influence.

The composition of the elements in the formal calculation of the production cost of the final output should be differentiated so as to take into account the specific features of the subdivision:

a) it is advisable to assign production cost to production units according to a composition identical to the composition of the production cost of the association (enterprise). It is advisable to include nonproduction costs only in the production cost of production units which actually ship the product;

b) it is wise to include the following in the production cost of shops:

i. outlays for principal materials, raw materials, purchased intermediate products and components, and intermediate products produced internally (if the

intermediate product version is used for recordkeeping and calculation of production cost);

ii. the base and supplemental wage of production workers;

iii. social insurance deductions;

iv. costs of maintaining and operating equipment;

v. shopwide costs;

c) it is advisable to include only direct production costs in the production cost for sections and brigades.

2.9. Depending on the specific features and capabilities of organizations for keeping records on the costs, it is possible to plan the production cost of a brigade so as to include the wages of workers, the value of raw materials, supplies, tools, and other costs whose level depends on the brigade or to establish in the plan standard rates of consumption of raw materials, supplies, intermediate products, components, fuel, thermal energy, and electric power, tools, production gear, and other physical resources in physical and value terms.

On the basis of the quotas established in shops it is wise to work up schedule-plans (limits) for furnishing brigades supplies, parts, components, tools, and so on, which must be issued by shop storerooms, strictly according to the plan (limit). An additional quantity may be issued on the basis of documents filled out for rejects, spoilage, or loss and only with permission of the chief of the shop.

In order to increase the motivation of the collectives of economic accountability brigades to reduce the expenditure of physical resources in every way, when the results of their activity are being totaled up, a computation should be made both of the saving on individual resources as well as the total indicator of conservation (saving -, overconsumption +) for all cost items broken down to their level. It is recommended that "Personal Conservation (Thrift) Accounts" be used for this purpose in brigades.

The personal conservation account is a document in which monthly records are kept (if necessary and special equipment is available, they may be kept by 10-day periods or daily) on the conservation of basic and auxiliary materials, production gear and tools, energy in all forms both in quantity in physical terms and also in value terms.

The personal conservation account may take this form:

Types of Physi- cal Re- sources	Unit of Mea- sure- ment	Unit Price	Consump- tion Ac- cording to Stan- dard	Actual Con- sump- tion	Conservation (overexpenditure)			
					For Month		Since Begin- ning of Year	
					In Physi- cal Terms	In Rubles	In Physi- cal Terms	In Rubles

1.10. It is recommended that the production cost of output (work items and services) of subdivisions in the auxiliary production operation be assigned in this form:

- I. Unit production cost of the product (work item, service, order, etc.);
- II. Advance estimates of production cost.

The unit production cost of the product (work item or service) is the basis for computing planning-calculation prices (see Point 1.22). The planning-recordkeeping units used in the planning and recordkeeping of the production program, orders, and representative samples of individual product groups are taken as the units in the formal computation of the production cost in auxiliary production.

It is recommended that representative samples of product groups be taken as units in the calculation when subdivisions have a long products list (tool production). The representative sample must have the characteristic features of the average products which it represents, including the following: design features and the materials used, the particular features of the manufacturing process, the average labor intensiveness of products in the group, and a high proportion to output of the given group of products.

The advance estimates of production costs reflects the general level of cost necessary to perform functions for which the subdivision in the auxiliary production operation is responsible. The list of cost elements included in the advance estimates of costs of the given subdivision depends on the content of the functions it performs. When the advance estimate of production costs is being drawn up by fuel and power and transport subdivisions, it should be taken into account that for purposes of reducing costs per unit of final output of the association (enterprise) the volume of services (work items) of these subdivisions may be lower than planned. For that reason the advance estimates of costs of fuel and power and transport subdivisions must be planned both for the plant as a whole and also for each section, and the costs must be further subdivided into variable and fixed. For instance, in the case of the fuel and power section variable costs would be the cost of power at the price it is obtained from the state power system; for the natural gas section it would be the cost of gas at the delivery price, and so on.

In evaluating fulfillment of the plan for production costs only variable costs should be applied to the actual volume of services (work items) performed.

2.11. In order to delineate responsibility for the level of costs among the structural subdivisions, raw materials, supplies, purchased intermediate products, intermediate products produced internally (when the intermediate-product version of recordkeeping and calculation of production cost is used), finished articles, work items, and services of subdivisions in the auxiliary production operation must be included in the actual production cost of subdivisions which are consumers of the planning-calculation prices.

The actual production cost should be adjusted for the net result of penalties paid (+) and received (-) on the basis of claims in economic accountability. A deduction is made from the total conservation for that saving achieved in the reporting period over the planned saving which resulted from the following: a) failure to carry out measures to develop and improve production and workplace health and safety; b) a violation of the established standards, technical specifications, or process formulas.

2.12. The ECONOMIC BENEFIT (SAVING) from performance of scientific-technical measures to apply new technology, to improve the organization of production and the organization of work, is calculated on measures which the subdivision carries out in accordance with assignments given it or on its own initiative. If the measure is being carried out jointly with another functional or production subdivision (subdivisions), then the share of the saving is credited to each subdivision in proportion to its contribution.

Calculation of the benefit (saving) is made according to the sectoral methods (instructions) elaborated on the basis of the Method of Determining the Economic Efficiency of Using New Technology, Inventions, and Efficiency Proposals, approved by a decree of the GKNT, USSR Gosplan, the USSR Academy of Sciences, and the USSR State Committee for Inventions and Discoveries dated 14 February 1977, and the Method of Determining the Economic Efficiency of the Measures for the Scientific Organization of Work, approved by USSR Goskomtrud on 28 June 1970.

2.13. LABOR PRODUCTIVITY is planned and recorded in the form of final output produced in the relevant units of measurement (for manufacturing production units and basic production shops--in NChP, NSO, or physical units; for other subdivisions in terms of the standard wage or quota-hours) per worker.

Reduction of labor intensiveness is determined from the moment when the relevant measure is introduced to the end of the planning period and represents the total saving in man-hours pertaining to the given product. The total reduction of labor inputs for the planned volume of production is assigned on the basis of the reduction of the labor intensiveness of particular products per unit output (for the production program).

FOOTNOTES

1. Hereinafter referred to as the "economic accountability commission."

2. In those associations and enterprises where the organizational structure of production is not broken down into shops or where the shops have been consolidated into production plants or scientific-technical subdivisions have been joined with production entities to form scientific-production complexes the principles set forth below are to be applied in view of the peculiarities of the organizational form of the respective subdivisions.

3. The staff service consists of departments (administrations) and its subordinate shops, sections, laboratories, warehouses, and other subdivisions.

4. The following can be taken as a model in developing the methods: "Metodicheskiye ukazaniya po analizu finansovo-khozyaystvennoy deyatel'nosti proizvodstvennykh obyedineniy i predpriyatiy" [Instructions on Methods of Analyzing Financial and Economic Activity of Production Associations and Enterprises], USSR Ministry of Finance, Moscow, Finansy i statistika, 1983; "Metodika ekonomicheskogo analiza deyatel'nosti proizvodstvennogo obyedineniya" [Method of Economic Analysis of the Performance of the Production Association], Moscow, Finansy i statistika, 1982.

5. Hereinafter referred to as "planning-performance indicators."

[No 39, Sep 86 pp 16-17]

[Text] 3. Application of the Principles of Internal Economic Accountability in Functional Departments and Services

3.1. Functional departments and services of associations (enterprises) are classified in the following groups depending on the functions they perform, the nature of their influence on the end results and the technical and organizational development of the association (enterprise) as a whole, and, as a consequence, on development of opportunities to apply the principles of internal economic accountability in the planning, recordkeeping, evaluation, and stimulation of their activity:¹

1--TECHNICAL DEVELOPMENT DEPARTMENTS, which are responsible for increasing the technical level of production, which organize the application of new technology and progressive manufacturing processes, scientific methods of the organization of work and the organization of management, and which on that basis guarantee high product quality, the devising of technically sound standard rates and allowances for utilization of all types of production resources, and their constant improvement.

They include the following departments:

- i. chief designer's department;
- ii. chief process engineer's department;
- iii. department for new technology;
- iv. department for mechanization and automation;
- v. department for preparation of production;
- vi. technical inspection department;
- vii. department for adoption of standards;
- viii. department for efficiency proposals and inventions, etc.

II--SERVICE AND AUXILIARY DEPARTMENTS, which provide the production of all types of energy, tools, and production gear, which provide transport services, which repair and service equipment, buildings, and installations, which are responsible for the supply of equipment and materials, for sales, and so on, which organize application of new technology, progressive manufacturing processes, scientific methods of the organization of work and the organization of management in their subordinate production subdivisions, and which in this way guarantee a constant drop in production costs.

They include the following departments:

- i. department of the chief mechanic;
- ii. department of the chief fuel and energy specialist;
- iii. tool department;
- iv. transport department;
- v. department for supply of materials and equipment;
- vi. sales department;
- vii. housekeeping department, etc.

III--DEPARTMENTS FOR GENERAL ADMINISTRATION AND ORGANIZATIONAL SUPPORT, which perform the general functions of management, economic planning and operation scheduling, personnel affairs, record keeping, information and other types of support of the production and economic activities of the association (enterprise).

They include the following departments:

- i. production department;
- ii. economic planning department;
- iii. department for the organization of work and wages;
- iv. department for capital construction;
- v. financial department;
- vi. accounting department;
- vii. legal department;
- viii. personnel and technical training department;
- ix. department for workplace safety, etc.

3.2. Application of the principles of internal economic accountability within the production entity presupposes the following in organizing the activity of the group of technical development departments:

- i. assignment to each department of items related to specific types of physical resources consumed by production subdivisions and assignment to them of responsibility for setting standard rates of consumption and analyzing the consumption of those resources and taking the necessary steps to correct the discrepancies found between actual consumption and the standard. A sample scheme for assigning the responsibility of production subdivisions for individual types of costs is given in Appendix 10;
- ii. establishment of economic responsibility for unproductive costs and other types of losses incurred by the association (enterprise) and its subdivisions as a consequence of overcosts in their work (see Section 4);
- iii. organization of material incentives as a function of achievement of indicators characterizing the quality of the performance of the organizational subdivision and aimed at improvement of the end results of the association (enterprise).

It is recommended that the following be used as planning-performance indicators for this group of departments:

1. The department's work plan (list of measures).
2. The assignment for reduction of technological labor intensiveness, specific consumption of the principal materials and fuel and energy resources.
3. The economic benefit (profit) from the scientific-technical measures performed.
4. The wage fund.
5. The limit on the costs of servicing the department.

3.3. Application of the principles of internal economic accountability in organizing the activity of the group of service and auxiliary departments presupposes application of the requirements indicated in Point 3.2 for departments in the first group, as well as the following:

- i. establishment of direct motivation and responsibility of the departments in this group for reduction of costs in the production subdivisions under their jurisdiction. The main criterion for evaluating performance and for material incentives of the departments in this group is achievement of the association's (enterprise's) continuous operation at a uniform pace along with reduction of the costs related to the activity of this service;
- ii. establishment of allowance for working capital (standard allowances pertaining to stocks of tools, spare parts, uninstalled equipment, and so on).

It is recommended that the following be used as planning-performance indicators for this group of departments:

1. The department's work plan (plan of measures).
2. The assignments for the reduction of labor intensiveness and specific rates of consumption of material resources and fuel and energy resources.
3. The economic benefit (saving) from the scientific-technical measures performed.
4. The maximum level of the service's costs per ruble of commodity output of the association (enterprise).
5. The standard allowance on working capital.
6. The wage fund.
7. The limit on the costs of maintaining the department.

3.4. Organization of the activity of the departments for general administration and organizational and economic support (the third group) presupposes the following in the context of internal economic accountability:

- i. establishment of economic accountability for unproductive expenditures and other types of loss incurred by the production association (enterprise) and its subdivisions as a result of oversights in the work of these departments;
- ii. financial stimulation of personnel both for the performance of the association (enterprise) as a whole and also to take into account quality performance of the functions placed on the department. The latter is done by establishing individual indicators as supplemental conditions for the awarding of bonuses. It is advisable to include one or two general-economic indicators of the performance of the association (enterprise) as a whole among the planning-performance indicators in order to establish specific (personal) responsibility for performance of the assigned (performance) indicators of the association (enterprise) as a whole.

3.5. It is recommended that the following be used as indicators for evaluating the performance and for stimulating the departments in this group:

- i. PRODUCTION DEPARTMENT--fulfillment of obligations for product deliveries in accordance with contracts concluded and job orders taken for filling; a uniform rate of output; and the standard allowance on work in process;
- ii. ECONOMIC PLANNING DEPARTMENT--the plan for the maximum level of costs per ruble of commodity output (in the branches of Group A), profit (in the branches of Group B) for the association (enterprise); punctual adjustment to prices; advance estimate of plantwide costs;

iii. LABOR AND WAGES DEPARTMENT--the plan for labor productivity; absence of overexpenditure of the wage fund; assigned standard ratio between the rise of labor productivity and the rise of wages; the plan for adoption of technically sound quotas and the assignment for reduction of labor intensiveness;

iv. CAPITAL CONSTRUCTION DEPARTMENT--the plan for activation of fixed capital, production capacity, and projects; standard allowance on stocks of uninstalled equipment;

v. ACCOUNTING DEPARTMENT--the limit of expenses to maintain the administrative and managerial staff; reduction of payables and receivables; the plan of measures in the domain of improving recordkeeping and ensuring preservation of socialist property;

vi. FINANCIAL DEPARTMENT--the profit plan; preservation of "own" working capital; punctuality of payments to the budget and to bank institutions on loans; reduction of receivables;

vii. LEGAL DEPARTMENT--punctual drafting of contracts and monitoring their performance; punctuality and accuracy in verifying that draft orders, decisions, and instructions are in conformity with legislation in effect; improvement of the net result of penalties received and paid;

viii. PERSONNEL AND TECHNICAL TRAINING DEPARTMENT--the plan for training and improvement of the qualifications of personnel; reduction of personnel turnover; reduction of worktime losses resulting from breaches of work discipline; limit on size of labor force;

ix. WORKPLACE SAFETY DEPARTMENT--the plan of measures for workplace health and safety; reduction of cases of accidents.

It is advisable to establish a limit on the costs of maintaining the department for all departments in this group, just as it is for the departments of other groups.

3.6. Unproductive expenses and other types of loss inflicted on the association (enterprise) and its subdivisions:

i. in the departments of the first group these pertain to a drop in the department's actual achievement of the "economic benefit (saving) from the scientific-technical measures performed";

ii. in the departments of the second group this refers to a rise of actual costs in connection with determination of the "maximum level of costs per ruble of commodity output";

iii. in the departments of the third group they are singled out and recorded separately in connection with evaluation of performance and the awarding of bonuses to workers.

3.7. PROCEDURE AND METHODS FOR PLANNING AND RECORDKEEPING ON FULFILLMENT OF INDICATORS OF THE PERFORMANCE OF THE FUNCTIONAL DEPARTMENTS AND SERVICES.

3.7.1. Indicators are planned for departments and services by the economic planning department with the help of other functional departments and also the department whose activity is being planned. The specific value of the planned indicators is determined on the basis of the planning targets assigned to the association (enterprise) and the relevant indicators contained in the technical, industrial, and financial plan. The planning-performance indicators assigned to the department and services must be an organic part of the technical, industrial, and financial plan of the association (enterprise) and must be specifically assigned to those responsible for fulfillment.

The planned indicators are assigned by the director of the association (enterprise), by the chief engineer, or deputy directors in accordance with the established jurisdiction of the departments.

In conformity with the method for drafting the technical, industrial, and financial plan the indicators are broken down for the year being planned quarter by quarter. The quarterly assignments are broken down by months by the department independently subject to concurrence of the economic planning department and is approved by the management official of the association (enterprise) to whom the department is functionally subordinate.

3.7.2. The WORK PLAN of the department (service) includes a list of projects which are to be performed in the planning period either by the department's personnel directly or by other departments under their supervision. These include the measures of the plan for technical and organizational development of the association (enterprise) in accordance with the tasks and functions of the department.

For example, the work plan of the chief designer's department would include:

- i. the plan for R&D projects;
- ii. the plan for creating new products and putting them into production and for improving the quality of products already produced;
- iii. the plan for product certification;
- iv. the plan for mechanical-engineering preparation of production, including the plan for new technology, etc.

The work plan of the chief process engineer's department would include:

- i. the plan for application of progressive technology;
- ii. the plan for technological preparation of production;
- iii. the plan for product certification, etc.

The work plan of the chief mechanic's department would include:

- i. the plan for overhaul, mid-sized repairs, and modernization of equipment;
- ii. the main list of work items in accordance with the scientific research schedule-plan;
- iii. measures to apply new technology, etc.

The measures to apply new technology are worked out so as to state the dates for application, the extent and sources of financing, the coparticipants, the size of the economic benefit, the numbers of the items in the new technology plan, the plan for organizational and technical measures, and the schedule for preparation of production. In a number of cases they must be supplemented by detailed operational work plans or schedules for performance of work items, especially in planning the load on equipment and its maintenance in working condition, the supply of materials and tools to production, and so on.

Records on fulfillment of the work plan are kept by the month and a cumulative total since the beginning of the year for each point of the plan on the basis of documents confirming performance of the measure (work item).

3.7.3. ASSIGNMENT FOR REDUCTION OF LABOR INTENSIVENESS (in quota-hours) includes the following: for the labor and wages department (OTZ)--the existing (paid) labor intensiveness of all products; for the technical development departments and also the auxiliary and service departments--the technological labor intensiveness of the product.

The OTZ organizes the keeping of records on the change in standards of inputs of labor for products and on the breakdown of the entire output by departments. The actual change of the standard rates achieved over the month for particular products is multiplied by the actual volume of output. The reduction of the labor intensiveness of the principal product is determined here by direct computation, but if there are many items on the list (spare parts, etc.), the items are consolidated.

3.7.4. The TARGET FOR REDUCTION OF STANDARD RATES OF CONSUMPTION OF PHYSICAL AND FUEL-ENERGY RESOURCES is assigned to departments on the basis of targets for the average reduction of specific rates of expenditure of principal materials and fuel-energy resources per million rubles of commodity output and the standard rates of their consumption assigned to the association (enterprise).

Records are kept on changes in the physical allowances for the various types of physical and fuel-energy resources in a breakdown by functional subdivisions on the basis of a summary of reports on changes in standard rates reflected in normative calculations.

3.7.5. ECONOMIC BENEFIT (SAVING) FROM SCIENTIFIC-TECHNICAL MEASURES PERFORMED is a comprehensive indicator characterizing the department's contribution to increasing the production efficiency of the association (enterprise).

If the measure planned is performed jointly with other functional or production subdivisions, then the share of the benefit is assigned to the given subdivision according to its contribution.

It is recommended that the benefit (saving) be calculated for each measure and for all the measures as a whole and that the actual benefit achieved be recorded in accordance with the procedure set forth in Point 2.12.

3.7.6. MAXIMUM LEVEL OF COSTS OF THE DEPARTMENT PER RUBLE OF COMMODITY OUTPUT is planned for auxiliary and service departments as the principal indicator in economic accountability on the basis of the respective targets assigned to the association (enterprise). This indicator is planned and recorded in the form of the ratio of costs incurred both directly by the production subdivisions subordinate to the department and also by other subdivisions for the respective type of costs, divided by the volume of commodity output of the association (enterprise) in wholesale prices. For example, the costs recorded for the chief mechanic's and chief fuel and power specialist's departments include the relevant costs of maintaining and operating equipment, while for the service of the main fuel and energy specialist they also include the value of various types of energy, and so on, consumed; for the tool department they would include reimbursement of the wear of inexpensive and rapid-wearing tools and the costs of replacing them.

3.7.7. The indicator "STANDARD ALLOWANCE ON WORKING CAPITAL" is worked out by the financial department jointly with the relevant functional subdivision in accordance with the sectoral instruction on setting the standard allowance on working capital. The composition of the standard allowance on working capital is determined for each functional subdivision so as to take into account the type of production stocks which are created in the relevant service. For example, it is recommended that the standard allowance on working capital representing the stock of tools and production gear produced both internally and acquired outside be assigned to the tool department; a standard allowance on working capital in the form of spare parts to the chief mechanic's department, and so on.

3.7.8. The wage fund for the personnel of the department is determined on the basis of the table of organization and salaries. The saving against the wage fund achieved by reducing the number of personnel is used according to established procedure for supplemental payments to the department's personnel.

3.7.9. The LIMIT OF EXPENDITURES TO FINANCE THE DEPARTMENT represents the sum total of current costs for the following items: wages of engineering and technical personnel and employees plus supplements; travel expenses; office expenses; postage and telegraph and telephone service; outside services (by order of the department in question); and miscellaneous expenses.

The size of the limit is assigned to the department according to the advance estimate of administrative and managerial expenses of the association (enterprise) and in accordance with targets for reducing them.

3.8. AWARDING OF BONUSES TO THE PERSONNEL OF DEPARTMENTS.

3.8.1. The awarding of bonuses to the personnel of functional departments is organized so as to guarantee that the size of incentives depends both on payment of high results in the performance of the association (enterprise) as a whole and also on the size of the specific contribution of the various subdivisions to the overall achievements.

3.8.2. To that end it is recommended that the total planned size of the bonus for engineering and technical personnel and employees of functional departments in the first and second groups be divided into two parts: one part is paid for fulfillment and overfulfillment of the indicators for the performance of the association (enterprise) as a whole (fulfillment of the delivery plan in accordance with contracts concluded, the rise of labor productivity, reduction of maximum cost per ruble of commodity output, the growth of profit, etc.), and the other for fulfillment of the targets assigned to the functional subdivision pertaining to its own activity regardless of the performance of the association (enterprise) as a whole.

The targets assigned to the third group of departments are used as supplementary conditions in the awarding of bonuses.

4. Economic Accountability of the Subdivisions

4.2. Economic accountability for oversights in performance and for negligent and inaccurate fulfillment of duties both to the association (enterprise) and to one another must be borne both by production subdivisions and also by the subdivisions of the management structure (functional departments).

The production subdivisions and functional departments are accountable to the association (enterprise) for unproductive expenses and other types of loss occurring in the association (enterprise) as a consequence of shortcomings in their work and also for breaches that have an impact on the normal course of the production process and result in economic losses.

Production subdivisions bear responsibility to one another for nonfulfillment or improper fulfillment (with respect to deadline, quality, assortment, products list, and so on) of planning targets for output of products (performance of work items and services), for filling internal orders, etc.

The functional departments are accountable to the production subdivisions and to one another for failures to meet deadlines for the drafting and breaking down of plans, normative, design, and process documentation, for their quality, and so on, when these breaches result in economic losses.

4.3. Economic accountability in the system of internal economic accountability within the production entity is achieved by increasing the production cost (reduction of profit or the economic benefit) or by a direct reduction of incentive resources of the subdivisions which are at fault by the amount of the claims against them for oversights in their work or for negligent and inaccurate performance of the duties placed on them.

The interests in the system of economic accountability of the injured subdivision are respected through an appropriate adjustment of performance indicators of the amount of the claims filed when the results of economic activity are totaled up.

4.4. Application of economic accountability in relations within the economic entity is based on the classification of claims according to specific parties responsible, the procedure for filling out claims and filling them, and determination of the type and extent of accountability for the claims filed.

4.5. The classification of claims must contain the list of possible claims, those responsible for their occurrence, designation of the primary documents, and the terms and extent of responsibility. When the classification system is being developed for claims, it is wise to group them as follows:

I. Claims concerning tardy and incomplete supply of resources and transportation equipment to production.

II. Claims related to delivery of defective materials, parts, assemblies, intermediate products, tools, and production gear which do not meet standards and technical specifications.

III. Claims concerning substandard and tardy repair work and activation of fixed assets.

IV. Claims related to violation of rules governing the use (expedition) of production resources.

V. Claims related to violation of technical, organizational, and economic conditions of production.

VI. Claims concerning unproductive expenses and other types of loss to the association (enterprise).

4.6. Claims may envisage that accountability be ascertained either by attributing the full amount of the loss incurred to the subdivision at fault or penalties in established proportions.

The loss subject to attribution to the subdivision at fault includes the total amount of unproductive expenses and other types of losses to the association (enterprise), additional costs in subdivisions (expenditure of supplies, energy, fuel, and wages), losses resulting from idle time, etc.

The penalties are established in percentages of the value of the planned assignment (order) not performed; or in a fixed amount for each occurrence of a violation (an hour of equipment downtime or turnaround time of vehicles; tardy return of containers, etc.).

It is advisable to apply the penalties to recurring violations for which it is possible to calculate the possible amount of economic losses in advance.

The following are mandatory conditions for advancement of economic accountability on the basis of filed claims:

- i. actual guilt of the given subdivision for the economic losses incurred;
- ii. punctuality in writing up and submitting the claims.

The soundness of the claim must be determined on the basis of primary documents of bookkeeping or operational recordkeeping (reports on rejects, documents certifying substitution of materials, documents certifying downtime, and so on).

4.7. The following procedure is recommended for filling out and submitting claims:

- i. the claim is submitted by the subdivision affected by the breach of internal business obligations, or with respect to unproductive expenses of the association (enterprise) by the relevant functional department against subdivisions which have committed the violation of the established assignments and duties. The claim is drawn up in writing in three copies and signed by the manager of the subdivision;
- ii. the subdivision which is the claimant, once it has registered the claim in a register devoted to the purpose, delivers one copy to the subdivision which is the respondent within the allowed interval, a second copy to the functional department responsible for the relevant area of operation in which the deviation from the planned course of the production process occurred, and the third to the accounting department;
- iii. the respondent-subdivision is required to examine the claim within the allowed period and either to accept it (altogether or partially) or to file a documented rejection. If the claim is not rejected within the allowed period, it is considered accepted; if the claimant-subdivision does not concur in the justification of the respondent-subdivision's rejection, it is entitled to take the dispute which has arisen before the economic accountability commission for its deliberation within the allowed period of time. The decision of the economic accountability commission is final and is not subject to confirmation;
- iv. the evidence concerning claims accepted without dispute by the subdivision to blame or decisions of the economic accountability commission acknowledged to be proper shall be sent to the appropriate functional departments (accounting department, economic planning department, labor and wages department) and shall be taken into account by the economic accountability commission in evaluating the results of socialist competition of the association's (enterprise's) subdivisions.

4.8. In the consideration of claims and disputes related to them the causes of the violations and the particular persons responsible must be ascertained for subsequent settlement of the issue of calling them to account (financial liability, disciplinary responsibility, and so on) pursuant to established procedure.

5. Financial Incentives for Work Collectives and Individual Workers of Production Subdivisions

A. Formation and Use of the Wage Fund

5.3. It is recommended that the wage fund be formed on the basis of stable rates in order to intensify the stimulative effect of the wage toward achievement of high final results in the activity of the association's (enterprise's) subdivisions. These rates must motivate work collectives to work with fewer personnel and to achieve economically sound relationships between the growth of the average wage and the rise of labor productivity.

5.4. It is advisable to form the WAGE FUND OF INDUSTRIAL PRODUCTION PERSONNEL IN MANUFACTURING PRODUCTION UNITS AND BASIC PRODUCTION SHOPS in accordance with the procedure established for formation of that fund in the association (enterprise) as a whole.

Here the wage fund of industrial production personnel is formed according to the plan for the coming year in two parts: the base wage fund and the amount of the increase (reduction) of the fund computed at the rate for each percentage point (ruble) of growth (reduction) of the volume of output (work performed) according to the indicator adopted for computation of labor productivity.

In certain sectors the wage fund should be formed in these subdivisions in accordance with the procedure in effect in the sector for associations (enterprises) on the basis of the standard wage per unit output in physical terms (work performed) or with respect to the standard wage per ruble of output, which is adopted for computation of labor productivity.

5.4.1. The procedure for determining the base fund and for distribution of the planned wage fund by quarters is performed in the subdivisions in accordance with the procedure called for in the sectoral Model Regulation on Formation of the Wage Fund of the Ministry (Department), Association (Enterprise).

5.4.2. The rates of formation of the wage fund are established on the basis of the need to achieve as a rule the entire growth of the volume of output in the subdivisions by raising labor productivity and observance of an economically sound relationship between the rise of labor productivity and the growth of the average wage.

It is advisable to differentiate the rates from subdivision to subdivision depending on the relative share of the variable portion of the wage fund in the total size of that fund and also to establish higher rates for those subdivisions which on the basis of optimalization of work stations achieved a rise in the output-capital ratio and improved utilization of production capacities within the limits of the rates assigned to the association (enterprise) as a whole.

5.4.3. The rates should be broken down to subdivisions in advance and simultaneously with the draft of the annual plan (reference figures). Revisions

may be made in these rates used for actual computation of the wage fund at the time when the annual plan is approved in the cases when this is necessary. The established rates are not subject to reapproval during the year.

5.4.4. The wage fund of nonindustrial personnel shall be fixed in an absolute amount for the production unit.

5.4.5. The total wage fund of the production unit (including the wage fund of industrial production personnel calculated at the rates and the wage fund of nonindustrial personnel) is determined by computation.

5.5. IN PRODUCTION UNITS AND BASIC SHOPS OF THE MIXED TYPE AND THOSE INVOLVED IN INTERNAL COOPERATION and also in tool, machine-repair, and other similar shops in the auxiliary production operation it is advisable to form the wage fund according to the standard wage per unit output in physical terms or the standard wage per unit of the volume of output (quota-hour, ruble, etc.).

Moreover, it is advisable to use the rates to determine the variable portion of the wage which changes according to the size of the growth of production. The adjusted fixed portion of the wage fund is established in an absolute amount. The total wage fund includes the variable and adjusted fixed portions. The standard wage per unit of the *i*-th product may be determined as the total amount of piece-rate unit prices for each operation in the manufacturing process adjusted for reduction of the unit prices because of revision of the quotas during the planning period, the average size of bonuses and supplements paid from the wage fund.

5.5.2. The standard wage per unit of the volume of output is determined by dividing the wage fund of piece-rate workers in the base year (adjusted by the percentage of reduction of labor intensiveness in connection with revision of quotas during the planning period) by the volume of output of the base year.

5.5.3. The adjusted fixed portion (FZPup) of the wage fund includes the wage fund of engineering-technical personnel [ITR], employees, MOP [service and building maintenance personnel], time-rate workers, and also bonuses paid from the wage fund and supplements for those categories of workers envisaged by labor legislation.

5.6. It is recommended that the wage fund IN FUEL AND POWER, TRANSPORT, AND OTHER SIMILAR SHOPS AND SECTIONS OF THE AUXILIARY PRODUCTION OPERATION be planned as a rule in an absolute amount on the basis of the calculated number of workers for the planned volume of operations.

5.7. In brigades (sections) of the principal and auxiliary production operations made up of piece-rate workers it is recommended that the wage fund be determined according to the standard wage (comprehensive piece rates) per unit of the product (work item) calculated on the basis of technically sound allowed times (output quotas).

It is recommended that the absolute size of the wage fund be planned in brigades (sections) of the principal and auxiliary production operations made up

of time-rate workers on the basis of the calculated number of workers for the planned volume of operations.

5.8. In brigades (sections) of the principal and auxiliary production operations made up both of piece-rate workers and also time-rate workers it is recommended that the wage fund be determined as the sum of the wages of piece-rate workers and the wages of time-rate workers determined in accordance with the procedure set forth in Point 5.7.

5.9. Other variants and diverse combinations of the normative methods of forming the wage fund may be used so as to take into account the specific features of particular subdivisions.

5.10. In order to strengthen the motivation of work collectives to speed up the rise of labor productivity and reduce the number of workers in production units and the shops of the principal and auxiliary production operations a portion of the saving on the wage fund may be used in accordance with established procedure for supplements and premiums. The size of these supplements and premiums should be determined so as to take into account each worker's personal contribution to development and application of new technology and manufacturing processes, to reduction of labor intensiveness, materials intensiveness, and energy intensiveness, to improving the quality of the product produced and to the fulfillment of other indicators which guarantee performance of the tasks which have been set.

These premiums and supplements must be reduced or altogether eliminated when performance indicators become worse.

B. Formation and Use of the Material Incentive Fund

5.11. In order to guarantee closer dependence between the size of the work contribution and the size of remuneration paid from the material incentive fund of the association (enterprise) it is advisable in production units and shops to form material incentive funds on the basis of stable rates. To that end the unified material incentive fund of the production association (enterprise) is best divided into the undistributed portion and the portion subject to distribution among the production units and the shops. The regulation on the procedure for formation and use of the material incentive fund in production units and shops is approved by the manager of the production association (enterprise) with concurrence of the trade union committee.

5.12. It is recommended that funds envisaged for the following be relegated to the undistributed portion of the material incentive fund of the production association (enterprise):

- i. current awarding of bonuses to management personnel in the management structure of the association (enterprise), to personnel of functional departments and staff services in accordance with established bonus systems;
- ii. payment of awards for overall performance on the basis of the results for the year;²

iii. the awarding of bonuses under special bonus systems (for high-quality manufacturing and punctual shipment of products for export; for creating new technology, putting it into production and applying it, and incentives for other achievements in performance of work);²

iv. the awarding of bonuses according to the results of socialist competition in the association (enterprise) among the production units (shops, departments), according to the results of reviews and competitions aimed at raising production efficiency in the production association (at the enterprise);

v. one-time incentives for collectives and workers of production units (shops) and functional departments and staff services for performance of assignments especially important to the production association (enterprise);

vi. the furnishing of one-time assistance to personnel in the administration of the production association (enterprise);

vii. the payment of regular leave for personnel with respect to that portion that corresponds to the share of their earnings paid out of the material incentive fund and regional coefficients applied to bonuses paid from that fund;

viii. incentives of workers who are enrolled as members of voluntary people's brigades, people's inspectors, and members of voluntary fire brigades;

ix. building up a reserve in the amount of 10 percent of the material incentive fund of the association (enterprise). The reserve shall be used as follows: for material incentives to the personnel of structural subdivisions in case of a temporary deterioration of their performance indicators for reasons beyond their control and in other unforeseen cases that occur during fulfillment of the plan of the current year, as well as for supplemental transfers to material incentive funds of production units in order to help them fulfill the product delivery plan.

5.13. It is recommended that funds from the material incentive fund of the association (enterprise) be transferred to the material incentive fund of the production unit (shop) for the following purposes:

i. current awarding of bonuses to workers, ITR, employees, and supervisory personnel of production units (shops);

ii. one-time incentives for the personnel of production units (shops) which have distinguished themselves in performing particularly important production assignments;

iii. the awarding of bonuses to collectives and individual workers on the basis of results of socialist competition and the results of reviews and competitions aimed at raising production efficiency within the production unit (shop);

iv. providing one-time assistance to the workers of the production unit (shop);

v. the awarding of bonuses for jobs directed toward raising the scientific-technical level of production and the quality of the product produced;

vi. the payment of bonuses and incentives to workers and collectives of the production unit (shop) for other achievements in their work.

5.14. The material incentive fund of the production unit (shop) according to the plan for the coming year is made up of the size of the base fund and the sum of the growth (reduction) of the fund calculated at standard rates for each percentage of reduction (growth) of the maximum level of cost per ruble of commodity output, the growth of profit or according to other fund-forming indicators which are assigned to each subdivision so as to take into account the system of planning-performance indicators in effect.

The additional growth (reduction) of the total size of the material incentive fund is calculated by multiplying the rate by the proportion of the increased (reduction) of the relevant fund-forming indicator.

It is advisable in determining the base fund of production units to ensure that they have equal initial opportunities for worker incentives; in order to achieve that consideration should be given to the degree of attainment of production capacity, working conditions, the existence of untapped productive potential, etc.

5.15. The standard rates of growth (reduction) of the material incentive fund of production units (shops) are established on the basis of the rates assigned to the association (enterprise) for the respective fund-forming indicator so as to take into account the impact of a change of the fund-forming indicators of the production unit (shop) on the change of the fund-forming indicators for the association (enterprise) as a whole.

It is recommended that higher standard rates be assigned to production units (shops) which on the basis of optimalization of work stations have achieved a rise in the output-capital ratio and improved utilization of production capacities.

5.16. It is advisable to establish the procedure for transfers to the material incentive fund of production units (shops) during the year to follow the procedure adopted for the association (enterprise) as a whole.

The absolute size of transfers to the material incentive fund of production units (shops) in the course of fulfillment of annual plans shall be treated as follows:

i. increased (reduced) depending on fulfillment of the sales plan adjusted for obligations related to deliveries in accordance with contracts concluded (for manufacturing production units and shops) or fulfillment of assignments to manufacture products according to the products list and by fixed deadlines (for production units and shops involved in internal cooperation and units and shops of the mixed type). Here for each percentage point of underfulfillment of the plan the material incentive fund is reduced by 3 percent (or another

figure that takes into account the specific nature of the activity of particular subdivisions). If the delivery plan is entirely fulfilled, the material incentive fund is increased by as much as 15 percent;

ii. reduced by the amount (up to 70 percent) of reductions from wholesale prices of products certified in the first-quality category (so as to take into account the share of the given subdivision in manufacturing the finished product), but not to exceed 20 percent of the planned size of the material incentive fund of the production unit (shop);

iii. reduced by the total amount of penalties for poor quality and costs to correct defects detected in a product delivered outside the association (enterprise) or to other production units (shops);

iv. reduced by as much as 5 percentage points of substandard products returned in the total volume of output.

The aggregate reduction of the material incentive fund of the production unit (shop) related to reimbursement of the costs of correcting defects and application of penalties for poor product quality must not exceed 20 percent of the planned size of this fund.

5.17. It is also recommended that transfers be made to the material incentive fund of production units (shops) from the funds obtained by conserving particular physical resources or for the economic benefit (savings) resulting from scientific-technical measures performed according to the procedure established for the association (enterprise) as a whole. These transfers for the economic benefit resulting from performance of scientific-technical measures should be made in accordance with the procedure and rates envisaged for transfers to the material incentive fund of the association (enterprise) out of the profit obtained from the actual reduction of production cost as a result of the use of solutions for application of new technology.

5.18. In production units (shops) manufacturing consumer goods when this is not their principal type of activity additional transfers are made (pursuant to the established procedure) to the material incentive fund for the growth of production of consumer goods in retail prices per ruble of the wage fund.

5.19. In case of a violation of the planned relationships between the growth of the average wage and the rise of labor productivity assigned to production units (shops) it is advisable to reserve the corresponding portion of the material incentive fund or (within production units) to credit it to the fund for social welfare and cultural programs and housing construction. The decision on transfer of these funds is to be made by the manager of the production association (enterprise) jointly with the trade union committee.

5.20. In those cases when shopwide material incentive funds are not created in the association (enterprise), it is advisable to transfer to the direct disposition of the chief of the shop and trade union committee of the shop a portion of the resources of the material incentive fund of the association (enterprise, production unit) for the purpose of awarding bonuses to personnel

according to the results of socialist competition within the shop, to extend one-time financial assistance, and to reward workers for performance of especially important production assignments of the shop.

5.21. Remainders of the resources of the individual incentive fund of the production unit (shop) not used according to the results for the year shall remain at the disposition of the individual incentive fund in the following year according to established procedure to be approved after the advance estimate of its expenditure.

D. Formation and Use of the Fund for Social Welfare and Cultural Programs and Housing Construction Within Production Units

5.23. The fund for social welfare and cultural measures and housing construction of the production unit is best formed for each year on the basis of the total size of the base fund and the amount of the growth for each percentage point of growth of the fund-forming indicators (labor productivity, profit, etc.). In this connection it is recommended that the base funds be determined for production units so as to guarantee that they have equal initial opportunities for dealing with matters of social and consumer welfare.

5.24. The rates of growth of the fund are determined for production units within the limits of the rate assigned to the production association as a whole. It is recommended that higher rates be assigned to production units which on the basis of optimization of work planning have achieved a rise in the output-capital ratio and improved utilization of production capacities. The rates may also be differentiated on a grading of the need of the workers of production units for housing, children's institutions, and cultural and consumer service facilities.

5.25. Transfers to the fund for social welfare and cultural measures and housing construction of production units shall be made during the year depending on fulfillment (underfulfillment) of the plan for the rise of labor productivity, profit, or other fund-forming indicators according to a procedure which is analogous to that in effect for the association as a whole.

5.26. The resources of the fund for social welfare and cultural programs and housing construction which the association has left at its disposition shall be used to replenish the resources of the fund for social welfare and cultural measures and housing construction transferred to the disposition of individual production units in connection with temporary reduction of economic indicators of their performance for reasons beyond their control and also for construction of housing, children's institutions, and cultural and consumer service facilities for the workers of the association as well as for other purposes in accordance with the advance estimate approved by the association with concurrence of the trade union committee and the procedure envisaged in the sector-wide Model Regulation on Procedure for Formation and Use of the Fund for Social Welfare and Cultural Programs and Housing Construction in Production Associations (Enterprises).

5.27. The resources of a fund for social welfare and cultural measures and housing construction shall be spent on the basis of a joint decision of the management of the production unit and the trade union committee in accordance with the advance estimate they have approved.

FOOTNOTES

1. The makeup of departments included in each group is given with machine-building taken as an example. In other sectors of the economy the classification of departments by groups is done according to the principles indicated above.
2. The resources of the unified material incentive fund envisaged for use for this purpose are placed at the disposition of production units.

7045

CS0: 1820/1

INVESTMENT, PRICES, BUDGET, FINANCE

IMPACT OF GOSBANK CREDIT POLICY ON ECONOMY ASSESSED

Increasing Bank Influence on Economy

Moscow EKONOMICHESKAYA GAZETA in Russian No 35, Aug 86 pp 6-7

[Article by V. V. Dementsev, chairman of the USSR Gosbank Board: "To Strengthen Bank Influence on the Economy"]

[Text] It was pointed out at the 27th party congress that recently the financial and credit system's influence on the economy has been decreasing. Credit has lost its true significance and is operating extremely inefficiently. In a number of cases the financial and credit mechanism even holds back progressive changes. There have not as yet been created such conditions as would induce enterprises and organizations and kolkhozes and sovkhozes to rationally utilize credit resources and to fully and in a timely way settle up with the state. A most important task of financial and credit organs, as is emphasized in the Political Report of the CPSU Central Committee, is not petty regulation of the operation of enterprises and organizations, but rather economic stimulation of production and strengthening of monetary circulation and cost accounting.

Credit Policy

On the basis of these requirements, measures for a radical reorganization of all banking operations have been worked out and are being implemented within the USSR Gosbank system.

The stable and continuous growth of the country's loan fund due to monetary accumulations amassed by the budget and the economy as well as the population's savings have made it possible to make large credit investments in all sectors of the economy. As of 1 July 1986, they amounted for Gosbank to 420 billion rubles, including short-term loans of 349 billion rubles and long-term loans of 71 billion rubles. As can be seen from the diagram, 57 percent of all working capital in the national economy is formed with bank credit. The participation of credit in financing capital investments is growing.

But in the 11th Five-Year Plan, the growth rate of credit investment significantly outdistanced the growth rate of production volume, the turnover rate of loans slowed down and nonpayments to the bank and to suppliers grew

sharply. Large credit sums were used for covering financial breakdowns caused by mismanagement, wastefulness and other shortcomings in the operation of enterprises and organizations. Thus during 1981-1985, with a growth of national income amounting to 17 percent, industrial production 20 percent and retail trade turnover 16 percent, short-term credit increased by 51 percent and long-term by 32 percent.

In the process of reorganizing the credit policy, the chief emphasis is made on providing enterprises and sectors with the necessary capital in strict conformity with the principles of credit extension and increasing the economic influence on mobilization of intra-establishment reserves.

The most important national-economic problem in 1986 is ensuring a planned growth of production volume without a growth in reserves of physical stocks. Bank institutions are not accepting for credit extension the remains of these assets in amounts exceeding the supply for the corresponding date of 1985. Credit is also not extended for stocks relating to the production of substandard items and finished products not in demand which have not been moving but lying around.

Such a purposeful credit policy has already yielded definite results. Credit investment on 1 July 1986 compared with 1 July 1985 had grown by 4.5 percent with a 5.6 percent growth of industrial production.

Improvement of the Credit Mechanism

Another important direction in the reorganization of credit activities is improvement of the actual credit mechanism, which over the course of earlier 5-year plans was continuously becoming more complex and becoming increasingly cumbersome and ineffective. Up to recently, for example, there were 70 kinds of credit, which seriously complicated the organization of credit relationships.

For this reason changes in the organization of the credit mechanism are linked to reduction of types of credit. For the purpose of improving the material and financial balance of plans, preparations are going on for a transition to annual credit planning beginning with 1987. On the basis of successfully proven experience, many sectors of the national economy are being shifted to new methods of credit extension, first of all to consolidated indicators. These methods eliminate excessive regulation in credit relationships and increase maneuverability in the use of capital borrowed by enterprises. Efficacy of bank control through the ruble is being increased.

Measures for improving credit matters are being implemented in close coordination with the introduction of the new methods of management and priority development of industrial sectors that determine technical progress, especially machine building. Thus measures have been worked out for credit to actively influence the development of machine building and its reorganization for the production of new types of machines, mechanisms and equipment, bolstering the material and technical base of other sectors of the national economy.

Special importance is attached to improvement of credit and payment relations with those enterprises where new methods of management are being experimentally tested, especially at the Sumy Machine-Building Scientific-Production Association and the AvtoVAZ Production Association.

The new arrangement of credit extension was worked out for associations and enterprises of the USSR Ministry of Chemical and Petroleum Machine Building as well as a number of enterprises and associations of other industrial ministries that are to be transferred in 1957 to full cost accounting. The stimulating role of interest for credit is being strengthened. The bank's institutions can increase or lower credit rates to 50 percent credit depending on fulfillment of the plan for delivery of products and profit use of working capital, curtailment of above-norm reserves of commodity stocks and timeliness of settlements with suppliers and the bank.

Measures are being implemented for a radical reorganization of the whole system of credit extension, financing and payments for the agroindustrial complex.

The financing and loans of all the enterprises of the agroindustrial complex are concentrated in Gosbank. For the purpose of ensuring its planning, credit extension and financing as a single whole, a new structure has been established for the central apparatus and the republic offices of Gosbank.

A unified arrangement of short-term credit extension for physical stocks and production outlays at agricultural enterprises according to a consolidated indicator has been worked out. Automatism is being eliminated in credit extension, which took place earlier, and the movement of own and borrowed funds is being more closely coordinated. It is contemplated to significantly simplify conditions for issuing credit. The number of documents presented by establishments to the bank is being sharply reduced. Facilities to which credit is extended have been consolidated, their number being reduced from 90 to 12.

In capital construction, bank control has also been strengthened. Title lists for new construction projects started in 1955 have been accepted by Gosbank institutions in strict accord with established norms of construction length of time. According to Gosbank proposals, 7,500 newly started facilities with an annual volume of capital investment of 334 million rubles have been excluded from the plan of farms. This made it possible to increase targets for putting fixed capital into operation by 1.3 million rubles. Facilities were not accepted for financing where allotted capital was inadequate for carrying out construction in normative time periods. They numbered 10,000, including 9,300 for USSR Gosagroprom.

Tightening of control over the use of own and borrowed capital for capital investment is secured through a sharp reduction of the number of documents required for arranging financing: instead of 16 documents, only 4 are presented to the bank.

In accordance with the adopted decisions on improving planning, economic stimulation and improving control of production of consumer goods in light

industry, measures are being implemented for increasing the role of credit in expanding production and strengthening the economy of this sector. A transition is being carried out to issue loans on the basis of the consolidated indicator. This makes it possible to significantly simplify the manner of arranging for credit and to reduce its forms from 27 to 10.

The application of measures is being expanded in economically influencing associations and enterprises permitting unjustified growth of reserves of commodity stocks, accumulation of products not in demand by the population and not providing for the preservation of own working capital and timely settlements with suppliers and the bank. In the current year, Gosbank has refused to light-industry enterprises credit extension for commodity stocks amounting to almost 3 billion rubles. These are for the most part not in demand by customers and are not selling well. The same applies to excessive remainders of stocks.

In trade, the reorganization of credit relationships aims at increasing the role of credit in development of goods turnover, strengthening of cost accounting and a regime of economy and elimination of nonproductive expenditures and losses.

In state trade and at consumer cooperatives, a transition is also contemplated to credit extension for an amalgamated facility, which will make it possible to ensure fuller coordination of credit with movement of goods. The technique of credit extension is being significantly simplified and the number of loan accounts is being reduced (from 11 to 4) as well as the large number of interest rates for credit. Bank control through the ruble of the operation of trade organizations is being strengthened, and conditions of credit extension are being tightened in the case of slowing down of working capital and accumulation of above-norm stocks of commodities.

Payment Discipline

Gosbank is devoting more attention to questions of payment discipline in the national economy.

Unpunctual return of credit and delays in settling with suppliers has created serious deficiencies in the economic and financial activities of a number of national-economic sectors. In the first half of the year, about one-fourth of the associations and enterprises failed to fulfill their contractual obligations for product deliveries. A portion of the enterprises and organizations exceeded the designated level of production cost and not secured the fulfillment of set profit targets.

Nonfulfillment by some ministries of the plan for financial results and above-plan expenditures at the expense of profit result in the formation of large shortages of own working capital. Many enterprises are not implementing measures to make up for permitted holdups through their own sources and do not use for these purposes a portion of the profit earmarked for the formation of economic stimulation funds. One can mention that among the chief reasons for unpunctual payments is diversion of capital for above-norm reserves of commodity stocks for which credit has not been extended. During the current

year, the growth of such reserves has been permitted by all the ministries, especially the USSR Ministry of Electrical Equipment Industry, the USSR Ministry of Chemical Industry, the USSR Ministry of Automotive Industry, the USSR Ministry of Timber, Pulp and Paper and Wood Processing Industry and the USSR Light Industry. The insistence of ministries and departments as well as the responsibility of heads of associations and enterprises for the state of payment discipline must be significantly increased.

Stability of Monetary Circulation

One of the very first duties of USSR Gosbank closely connected with its work on extending credit to the national economy is planning and regulation of monetary circulation. In the Political Report of the CPSU Central Committee to the 27th party congress, the objective of strengthening monetary circulation and developing distribution relationships was specified.

The normal functioning of money on a planned basis can actively contribute to the implementation of the policy in the field of distributive relationships aimed at stimulation of socially useful labor and the establishment of a direct relationship between remuneration of labor and receipts of enterprises from the production of products needed by the state and the population. At the forefront of the plan is the requirement of balancing monetary receipts and expenditures for each republic, kray, oblast and rayon.

The results on monetary circulation in the first half of 1966 attest to further growth of the population's monetary income and fuller satisfaction of the population's demand for basic food and nonfood commodities. But the total volume of retail goods turnover lags behind plan, which is primarily due to curtailment of the sale of alcoholic drinks.

USSR Gosbank increased control over the course of fulfillment of the cash plan and correspondence of monetary and goods flows. But losses in the volume of goods turnover with reduction in the sale of alcoholic drinks are slowly being compensated by increased sales of other goods. This shows that due attention is not being paid in the localities to questions of balancing income and expenditures of the population and accelerated development of goods production and provision of services. At the same time there is to be found here experience of good work. Thus, in Ulyanovsk Oblast party organs are systematically engaged in questions of strengthening monetary circulation. The oblast is constantly fulfilling commodity-turnover targets. Much is being done to expand paid services. As a result, an economically justified correlation is being secured between the income and expenditures of the population as well as fulfillment of Gosbank's cash plan. This experience was described in the pages of EKONOMICHESKAYA GAZETA in the article by Yu.G. Samsonov, secretary of Ulyanovsk CPSU Obkom, "The Cash Plan and the 'Health of the Ruble'" [EK, No 24].

In working on annual and long-term plans, it is important to strive for a real determination of the volume and structure of retail goods turnover and paid services in conformity with effective demand of the population in each republic, kray and oblast. It would be useful to strengthen with adequate reserves the real balances of the population's monetary income and

expenditures. And the main thing is that it is necessary to set up a barrier against any kind of violations of plan, credit or cash discipline, to vigilantly look after thrifty expenditure of monetary capital and to put a stop to wastefulness.

A Creative Approach to the Matter

The further improvement of financial and credit relationships decisively depends on restructuring of the style and methods of operation of the institutions of our system and a creative, resourcesful attitude toward the work of its personnel.

In accordance with the demands of the party and the government, Gosbank has launched a major operation on reducing and improving instructions and other normative documents. It is planned to rework and standardize before 1 January 1987 all basic instructions and directions on financial, credit and other operations with an establishment and to sharply reduce their number and volume. Even now, solely because of the fact that enterprises have started to provide the bank more rarely information on the presence of assets for which credit has been extended and expenditures, the number of documents relating to credit operations has been reduced for the year by 1 million, or by 40 percent.

Banks have to increase their participation in planning economic and social development on the scale of the country and for union republics and to improve current and long-range planning of credit and monetary circulation.

The problem is to link up production, financial and credit planning at the center and in the localities. The balance of monetary receipts and expenditures and credit plans may and must be an organic part of the plans of USSR economic and social development and annually be approved as part of these plans for the country as a whole and for the union republics.

There is the problem of more detailed differentiation of credit relationships with well and poorly operating enterprises. It is necessary to set up a solid barrier against the acquisition of credit by those enterprises which exceed planned expenditures, uneconomically use up raw and other materials and tolerate mismanagement and wastefulness.

In order to accelerate the turnover of national-economic resources and not to permit above-norm reserves of commodity stocks, it would be practicable to change the procedure of credit extension for stocks. There is hardly any justification to grant credit where the need for it arises through unsatisfactory organization of production, material and technical supply and difficulties in selling finished products. It is possible to significantly boost the role of credit in stimulating work on use of secondary resources and production waste and developing production capacities for their processing.

If we were to speak of a general problem, it would be having credit in all sectors of the national economy and at each enterprise and organization not transformed into a source for coverage of losses, "eaten" working capital and above-plan expenditures. And if a breach is permitted in working capital as

the result of operating at a loss, nonfulfillment of the profit plan and above-plan expenditures, then the enterprise itself would have to answer for it. Working capital needs to be made up from additional income from organizational and technical measures and from liquidation of financial reserves of enterprises and their superior organs. The main thing, however, is that we need to reduce expenditures, to "squeeze" them and to bar expenditure of capital above set norms and standards.

Relations with an establishment should be based not on the volume "assimilated" monetary capital but on the end result in the form of manufactured products needed by the national economy and the population.

Banks have to increase the effectiveness of their work in regard to control of concentration of material, financial and manpower resources for reequipment and modernization of existing enterprises and for those facilities which determine scientific and technical progress and the solution of social problems. Bank institutions are called upon to conduct a decisive struggle against any kind of additions in construction and against long construction times and accumulation of excessive physical stocks.

Gostbank USSR has as yet not reorganized its work in conformity with the requirements of the party and the government and the measures being implemented for speeding up the country's social and economic development. At the present time all work of the Gostbank USSR system is aimed at stimulating work for further improvement of banking affairs, significantly boosting the role of credit in intensification of production and bolstering cost accounting on the basis of self-financing and self-reimbursement as was specified in the decisions of the 27th party congress and the June (1966) Plenum of the CPSU Central Committee.

FIG. 1. Share of Credit in Sources of Working Capital (percentages)
(By Sector of the Economy in Period Years)

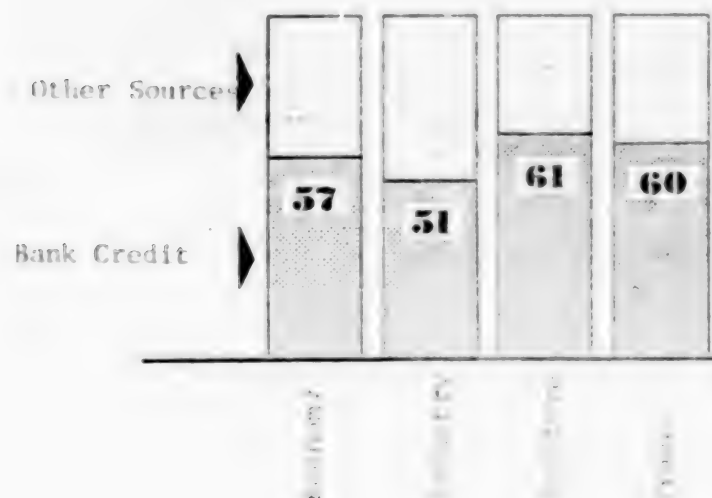
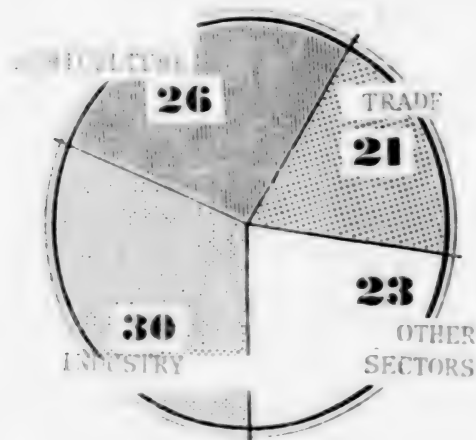


Fig. 2 USSR Gosbank Structure of Short-Term Credit Investment

(For 1 January 1986. By Sectors of the Economy; in percentages)



Weakening Payment Rate

Moscow EKONOMICHESKAYA GAZETA No 36, Sep 86 p 7

[Article by S. Vereshchagin, Economist: "Why Is the Rate of Payments Weakening?"]

[Text] Novgorod--As an official of an enterprises's financial office, I want to subscribe to the opinion of those participants of the discussion on reorganizing the economic mechanism who believe that the influence of the financial and credit system on raising the efficiency of the economy has diminished.

Before adopting the decision on changing the mechanism of credit extension and on the introduction of individual restrictions, we probably should carefully think through what effect this will have on all parts of the national economy and not just on bank indicators. No one doubts that any, even the slightest of deviations from the financial and economic activity of enterprises must lead to corresponding measures prompting their elimination and even better their prevention. And when measures are selected which have a negative impact not only on the "sick" part but also on the entire national economy, they are hardly justified. The following example may be cited.

In 1985 a change was entered in point 713 of the USSR Gosbank Regulations No 2 of 31 May 1979, the size of the discount on the amount of credit for invoices in process was increased by the amount of rejections received in the previous

quarter.... The idea of such a change is seemingly legitimate: why should a bank cover with its credit various kinds of violations of contractual obligations permitted by suppliers?

But if we look carefully at the adopted mechanism, it turns out that enterprises are being punished in advance, a quarter ahead of time, without taking into account whether violations will or will not occur in this period. Why should the bank create additional difficulties for the enterprise after the quarter is over?

Now on the reserve of the acceleration in the actual mechanism of payments. Let us start with the elementary, with the rate of movement of bank correspondence through communication channels. It is no secret that, despite the introduction of machines and automated systems of sorting correspondence, providing delivery by motor vehicle and the speed of moving correspondence have been markedly reduced.

For example, 10 years ago, document circulation between us and Leningrad took 3 days and Moscow 4-5 days. Today payment for accounts from Leningrad arrives on the 5th day and from Moscow on the 7th-8th day. It turns out that providing the bank's institutions with teletype had no effect on speeding up payments.

Apparently, the time has come to revise the semitelegraphic system of payments through cash transactions. For some reason or other the bank considers it normal that a payment document--demand for payment--from the supplier's bank to the payer's bank goes by mail when it would be obvious to have an arrangement of full payment by telegraph, which could speed up fivefold payments in the national economy. True, it would require a revision of the scheme of document transmittal, acceptance of bills, to work out a scheme of telegraphic codes, to equip bank institutions with the latest means of communication. Under present-day conditions, this is quite realistic. For the development of such a system, one can start work on payment demands for a sum, let us say, of 100,000 rubles and higher, with its future reduction to 10,000 rubles.

The practicability of existing rules of payment settling through USSR Stroybank is very doubtful. Thus, any discrepancy between plans of capital investment, financing, planning documentation and the sum of the concluded contracts provides the right for a Stroybank institution serving the purchaser of equipment either to halt financing or not to initiate it at all. At the same time, all instructions of Stroybank's central organs are generally phrased in this manner: not to permit..., to discontinue..., to return without payment... and the like.

In the 5 years that have elapsed since the founding of the bank serving our enterprises, we have not received one unqualified communication on initiation of financing for technical reequipment and, as a consequence, from 80 to 90 percent of all equipment was late in being paid for. But most reasons for the delay in initiating financing do not depend on enterprises.

It is difficult for an enterprise to "jump" over a picket fence of problems arising in the financing of technical reequipment, not to speak of modernization or new construction. But at the same time, Stroybank's brake works automatically. In this connection, no one raises the question: and what has the supplier to do with this?

As soon as a delivery contract is concluded, the economic mechanism affects its execution. It probably does not make sense to shift the problems of a careless buyer on the supplier, but this is what Stroybank is now doing. Would it not be more logical to think of how to help or influence the buyer through the mechanism of higher interest, fines and the like and not to spread the consequences of tardy payment settlements onto the supplier?

The reserves of acceleration in the payment mechanism which is used by Stroybank are many. Why, for example, not examine the question of transition to the scheme of subsequent acceptance (first the payment and then the agreement of the payer in the next 3-5 days) as it is done in Gosbank? The gain is 3 workdays and 4-5 calendar days. Under the conditions of control on the part of Stroybank over specifications and contracts for equipment, payment for the equipment not designated by the estimate is excluded.

Let us now see how the introduction of payment credit in the Stroybank system affects acceleration of payments. The main limit used by it is the limit on credit extension. In practice, the size of the limit covers only 50-70 percent of the need for it. Apparently, there is no need for such limitation, which is demonstrated, incidentally, by the experience of Gosbank. From the practice of financial work, I recall a number of such situations where 20-30 days remain to the end of the quarter and all funds are spent even though large sums of budget allocations arrive on the first day of the next quarter, but it is not possible to settle with suppliers: the limit for the bank institution has been reached.

The form of payments through presentation of letters of credit is now acknowledged as being most ineffective in payment settlements among enterprises (at the very least, undesirable in payment settlements through Gosbank). Very well, although under conditions of reduction of time for the use of letters of credit to 15 days, this opinion becomes no longer undisputed. Despite all the undesirability of payment settlements by means of letters of credit through Gosbank, this form has not only not been abolished but it even has credit support. And despite all the need for its use in payment settlements related to capital investments, Stroybank in general does not provide credit for the presentation of letters of credit.

From what has been said, the conclusion is obvious: the problem of introducing, as an obligatory indicator for the bank, a speeding up of payment settlements in the national economy cannot be put off.

This would be of great benefit in the transition to intensive methods of management of the economy.

7697

CSO: 1820/2

INDUSTRIAL DEVELOPMENT, PERFORMANCE

GOSPLAN EXPERT ANALYZES PRODUCTION CAPACITY UTILIZATION

Moscow PLANOVYE KHOZYAYSTVO in Russian No 8, Aug 86 pp 111-113

[Article by G. Prokofyev, chief specialist, USSR Gosplan, candidate in economic sciences: "Utilizing Production Capacities"]

[Text] Strengthening plan effect on seeking out production reserves * The role of free balance of capacities in national economic planning * Developing the methodology of computing capacities * Increasing the responsibility of the economic management organs for reliable evaluation of the effective capacities.

The planned growth of the country's production potential has allowed the Soviet economy to enter the 12th Five-Year Plan with a strong arsenal of fixed production capital valued at over 1.5 trillion rubles. During the elapsed five-year plan, the capacities for output of vital types of production have increased significantly. These have provided a capacity for steel smelting in the amount of 153 million tons, for production of sheet metal stock 113.4 million tons, and for production of mineral fertilizers over 33 million tons.

The increased capacities of material production and the orientation toward a capital-economical form of development of the national economy have created objective prerequisites for solving the key problem of current economics--the transition to the intensive means.

The development and realization of an extensive complex of special measures in the sectors of industry, transport and agriculture have made it possible in 1985 to increase the level of application of average annual capacities by over 90 percent in the production of 40 percent of the most important types of products. Particular attention here was given to placing a maximal load on the capacities developed within the last 5-10 years and distinguished by their higher productivity and design and technological innovation.

At the same time, within the system of current economic management and planning there remains as before the tendency toward growth in the volume of output of industrial production due to primarily extensive factors which provide for an increase in capacities by means of new construction.

In the 8th and 9th Five-Year Plans the growth in production turned out to be higher than the introduction of the corresponding production funds. This confirmed the more intensive application of previously accumulated capacities and led in the 9th Five-Year Plan to a significant depletion of their reserves.

In the 10th Five-Year plan the growth was already fully regulated by the introduction of new capacities, but the absolute reduction in volume of capital investments as compared with the preceding plan period caused an increase in the disconnected nature and disproportions in the raw materials and processing sectors. This led to a reduction in the level of application of the operating capacities, in the growth rates of labor productivity, and in other technical-economic indicators.

In the past decade, over 60 percent of the growth in output of industrial products was provided at newly introduced and reconstructed facilities. We might add that in the sectors having an established production apparatus and a stable product nomenclature (the coal industry, ferrous and nonferrous metallurgy, the building materials industry), where the main portion of new capacities compensates for those which have become obsolete, this indicator was somewhat lower than, say, in the chemical industry. Out of every three enterprises (facilities) introduced into operation in 1976-1984, at two of them the project capacities were not assimilated within the established standard times or were not fully utilized. For this reason, in the 11th Five-Year Plan the national economy was annually shorted industrial production in the amount of 14-15 billion rubles. Investigations into the utilization of production capacities at the enterprises of the ministries and departments confirmed the direct connection between this situation and the superficial development of the question of continuity in construction of new facilities, omissions in the organization of production, flaws in construction and assembly, equipment defects, planning errors, and lack of coordination with capacities already introduced.

The absence of a direct dependence or correspondence between the real indicators of the growth rate in output of products and in production capacities is explained not only by the untimely assimilation of planned capacities and by the incomplete utilization of existing ones. Rather, it is associated to a much greater degree with intersectorial and intraproduction disproportions arising due to organizational-technical misunderstandings.

The need for eliminating negative tendencies in investment activity, the complexity of effective renovation and development of the structure of fixed production capital, the improved formation of work sites, the involvement of additional natural resources into the national economic turnover--all these factors determine a strengthening of the plan effect on seeking out reserves for the more complete utilization of production potential, and especially its active portion of functioning capacities.

One of the possible directions for improving national economic planning is to increase the role and significance of the free balance of production capacities as an effective and efficient instrument in planning and proportional development of sectors of the economy. The balance of capacities represents a rather involved system of indicators characterizing the size of the capacity, the factors involved in its change and the level of application in a specific economic period. Concentrated within it is the sum total of data which may be used to control the process of intensification of social production, define any disproportions and "bottlenecks" which may arise at any of its various levels, determine the means and measures for ensuring intra-economic and intersectorial association, and establish the necessary national economic proportions.

Formulated on the basis of reliable computations of the production capacities, balance allows us to scientifically, with the aid of technical-economic substantiations, develop a plan of industrial production, determine the possible volumes of product output, and in accordance with the need of the national economy for it, define the necessary increase in production capacities due to technical retooling, reconstruction, expansion of existing enterprises and construction of new ones.

The balance of production capacities fulfills its most important function in formulating deeply substantiated investment decisions, thus confirming the objectively existing mutual relations with the reproductive process. This functional peculiarity of balance facilitates the selection of such a type of reproduction which ensures the achievement of comprehensive intensification.

An analysis of the accounting balances of capacities and a number of basic indicators for the reproduction and utilization of production potential in certain sectors of industry allows us to trace the intensity of renovation of effective means of labor, the dynamics of change in the capacities, and their load level.

A peculiarity of the investment practice of the past decade has been the tendency toward growth of production capacities generally due to extensive forms of reproduction--the construction of new and expansion of existing facilities and enterprises. Reconstruction and technical retooling have not become the predominant factors in the volumes of the realized increase in production capacities, despite the economic expediency of changing the reproductive structure of capital investments.

In the coal and lumber industries this situation is partially explained by the exhaustion of natural resources at the old deposits and the need for seeking out and developing new sources of the raw materials. However, for most sub-sectors of ferrous metallurgy and the building materials and chemical industries (with the exception of cases of realization of principally new technical decisions) this is evidence of a definite divergence with the course of intensification and increased effectiveness of social production.

We cannot consider to be satisfactory the reduction in the rates of renovation of capacities in the coal industry, in the steel smelting and rolling (ferrous metallurgy) productions, and in the output of cellulose. Here the accelerated replacement of obsolete machines, equipment and units has turned into a task of primary importance.

In the 11th Five-Year Plan the assets of these sectors were renewed somewhat more intensively than in the 10th, but still with a significant lag behind the standard requirements. For this reason, for example, in ferrous metallurgy in the 10th and 11th Five-Year Plans the production of steel using the most progressive methods (oxygen-conversion and electric furnace) increased, although slowly--by 6 and 2.1 percent (respectively). At the same time, the smelting of steel using less economical and rather outdated methods (in open-hearth furnaces) declined by only 7.1 percent.

In the 11th Five-Year Plan as compared with the preceding one, despite an increase in the relative volumes of manufactured production, the indicator for intensity of utilization of the production capacities dropped in the coal industry by almost 2 points, in steel smelting production by 2.7 points, in sheet metal production by 2.3, etc. This is explained by the leading increase in average annual values of the capacities of these types of production and by the increase in the degree of reliability of their accounting.

The development of project variants for the plan of USSR economic and social development for the 12th Five-Year Plan under the heading of "Balances of Production Capacities" has made it possible to integrate more closely the planning of new production capacities with the preliminary volumes of capital investments. Huge reserves have been found in the balance method of developing accounting indicators of the five-year plan. Also, shortcomings have been discovered in the instrument of planning currently being used. These shortcomings arose generally due to disruptions in the methodological requirements in the implementation of computing production capacities of enterprises and associations. We are speaking here of the inadequacy of the methodological and standards documents developed in the sectors for evaluating existing capacities, as well as of the nonobservance of methodological uniformity and approach in determining production capacities. As a result, in performing practical computations there are sometimes difficulties, for example, in selecting the leading unit (shop, section, aggregate, or group of equipment) according to which the production capacity is established. Many instructions on the computation of operating capacities give an unclear formulation of the method for determining the progressive indicator of equipment productivity, which is based on the stable achievements of leaders in production. The absence of recommendations concerning the periodicity of review and recertification of the value of production capacity often leads to the appearance of indicators in the reporting balances which exceed the 100 percent level of its application.

Some enterprises and production associations, using the "flexibility" of the existing methodological acts regulating the computation of production capacity, compute the potential capacities of a certain production "on their own", presenting a technical-economic substantiation for a plan which has been simplified ahead of time or made non-intense. This leads to the ineffective utilization of financial means and material and labor resources, the emergence of disproportions in the development of individual facilities and territories, to the appearance of intra-production and intersectorial discontinuities, to the disorientation of central planning organs, and to the emergence of negative phenomena in our economy.

All this determines the necessity of implementing specific organizational measures for increasing the responsibility of enterprises, associations and special services of ministries and departments for the reliability and objective nature of evaluating the existing capacities of a certain production subdivision. Specifically, this entails the development and practical introduction of a system of legal statutes defining the measure of state action taken against those who do not comply with the approved standards of utilization and levels of assimilation of planned production capacities.

We should examine the possibility of differentiated payments into the budget for fixed capital. This would entail establishing a reduced percentage rate in payment for capital during the period of assimilation of its project parameters, freeing the enterprise for a certain period of time in the case of achievement ahead of schedule of the technical-economic indicators set by the project, and significantly increasing the financial sanctions in the case of late assimilation of project capacities.

We should change the all-state system of material incentives given to participants in production for increasing the effectiveness of application of fixed capital and capacities. In order to subordinate the economic interests of the enterprises to the total interests of the national economy, it is important to approve the capital-forming indicator of utilizing existing capacities, making the material incentive funds of labor collectives directly dependent on the results of their work in realizing the existing capacities and reserves of operating production.

It would be expedient to examine the question of the practical implementation (as a singular and interrelated process) of planning the reproduction of fixed capital, i.e., the means of labor, as well as the rational and more complete utilization of their most mobile and active part--the existing capacities in their natural-substantial form. This would make it possible to trace most clearly the logical connection and effectiveness of interaction of the introduced fixed capital and capacities in a continuous chain: technical project--capital investments--fixed production capital--production capacities--assimilation of project technical-economic indicators--rational application of developed means of production.

As before, a vital sector of the reproductive activity of material production--capital repair--remains outside the sphere of centralized plan management. Every year around 44 billion rubles are spent for this purpose, i.e., over 30 percent of the overall volume of the savings funds directed toward building new production facilities and expansion, reconstruction and technical retooling of enterprises.

The basic directions for restructuring the economic management mechanism as presented in the Political Speech to the 27th CPSU Congress provide primarily for increasing the efficiency of centralized management of the economy, strengthening scientifically substantiated plan inception in realizing the main goals of the party's economic strategy, and defining the rate and proportion of development of the national economy and its degree of balance. It is specifically these requirements which would be met to a significant degree by measures directed at strengthening the role and significance of free balance of production capacities as a vital instrument in planning the reproduction of fixed capital and managing the process of highly effective application of existing capacities for material production.

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FOOD PROCESSING. DISTRIBUTION

GREATER AUTONOMY IN KOLKHOZ. SOME NEW TRADE SERVICES NOTED

Moscow SELSKAYA ZHIZN in Russian 19 Jul 86 p 2

[Interview by SELSKAYA ZHIZN correspondent with Aleksandr Ivanovich Iyevlev, first deputy chairman of the USSR's Gosagroprom State Committee for the Agro-Industrial Complex]: "The Farm Is Trading in the Marketplace"; date and place of interview not given; "first two paragraphs are SELSKAYA ZHIZN introduction]

[Text] In full swing summer is the most profitable time for the vegetable bazaars. However, the letters to our editorial staff are evidence that the kolkhozes and sovkhoses are making inadequate use of the right, given to them by the resolution of the CPSU Central Committee and the USSR Council of Ministers "On the further improvement of the economic mechanism of farming in the nation's agro-industrial complex," to sell at pre-set prices a significant portion of the produced fruit and vegetables and potatoes through the consumers' cooperatives, at kolkhoz markets and through their own stores and stalls.

Our correspondent, in an interview with A. I. Iyevlev, first deputy chairman of the USSR's Gosagroprom, asked him to respond to a number of questions in connection with this:

[Question] For a long time the members of many farms complained about the difficulty of selling fruits and vegetables. Now things have been changed and the farms have been given a large degree of freedom to maneuver in this matter. But for the time being, in practice it is rarely being used. What, in your opinion, Aleksandr Ivanovich, would explain the "halfheartedness" of the farmers? Does this not say something about some restraining factors that have not yet been eliminated?

[Answer] The organization of the sale by farmers of part of their own fruit and vegetable produce at pre-set prices is a new matter that is both needed and useful. I would like to note that things are starting to shape up, but just starting. The kolkhozes and sovkhoses are still showing an inadequate amount of initiative in using these broad rights which have been granted to them.

I think that the "bashfulness" of the farm workers is, first of all, the result of the habit rooted in many of them of living and acting "in accordance with instructions," and there is a fear of showing personal initiative. But, in fact, in the given situation, for all practical purposes, no additional instructions are required. In the resolution of the CPSU Central Committee and the USSR Council of Ministers it is clearly defined, how much and even what kind of produce the farm should supply to the enterprises and organizations that are responsible for state purchases and how much it can sell at pre-set prices through the consumers' cooperatives and the kolkhoz market. And here nothing remains to be done but to act. And this is precisely what the more energetic farm workers are doing.

The USSR Gosagroprom, the USSR Gosplan, the USSR Central Statistical Administration, the USSR Ministry of Finance and the Central Union of Consumers' Cooperatives have approved the instruction in which are explained all the details associated with payment in fulfillment of the plan for farm produce sold at pre-set prices through the consumers' cooperatives or the kolkhoz market. Now it is a matter of practical organizational work. In this the kolkhozes and soykhozes should receive assistance from the rayon agro-industrial associations and the oblast, kray and republic (ASSR) agro-industrial committees, whose direct obligation it is to render such assistance.

[Question] As is well known, a farm has the right to sell at its own discretion up to 30 percent of the plan amount of potatoes, fruits and vegetable produce. In connection with this the chairmen and directors are interested in a so very practical question: at what periods of time can they carry on trade in the marketplace and through the consumers' cooperatives at pre-set prices? Perhaps only after no less than 70 percent of the planned production has been supplied to the state purchasers?

[Answer] The sales periods for potatoes, vegetables, fruits, berries and table grapes at pre-set prices at the kolkhoz market or the consumers' cooperatives are determined by the farm itself. It can sell this produce at the beginning of the season, periodically during the course of the whole season or at the end of the season. It is merely necessary to have strict fulfillment of contractual obligations, ensuring deliveries to union and republic stocks. At the same time it must be noted that in fulfilling deliveries to the union and republic stocks it is also possible to use the produce sold at the pre-set prices, naturally, up to the 30 percent of the planned volume. It is important that the produce be sold to the people in those cities and workers' settlements to which the stocks have been allocated. In short, the stocks should be used up completely both through state and commission trade.

As far as above-plan production is concerned, it is sold at pre-set prices at the farm's own discretion only after fulfillment of the state plan.

[Question] The direct sale of all one's own above-plan production and part of the planned production is something new for the farm. And in order for this to take root and attain the necessary scale, its advantageousness should be evident...

[Answer] And so it is. And the advantage here is not just for one side.

The widespread organization by the kolkhozes and the sovkhoses of trade in their own production in the marketplace and through the consumers' cooperatives at pre-set prices is primarily of advantage to the buyers: on a daily basis they will be offered a greater variety of products. And ones of much higher quality. In addition, the opportunity is created for a significant reduction in the market prices for potatoes, vegetables and other products.

Finally, it yields a direct economic advantage to the kolkhozes and sovkhoses themselves. The organization of such trade makes it possible to ensure above all the sale of all the produce grown on the farm. Indeed, it has frequently turned out that the purchasing agents would decline part of the produce and the kolkhoz or sovkhos could not put it up for sale in the marketplace. In previous years the purchasing agents always dictated their own conditions to the kolkhozes and sovkhoses. In possessing a monopoly on the purchase of this production the purchasing agents bothered very little about the organization of timely and qualitative receipt of everything grown, did not always provide the farms with packaging and transported very little of the produce in their own vehicles. Their philosophy was simple: the sovkhos and kolkhoz have no place else to go and they will bring it themselves.

Now the situation is different and the purchasing agents need to work more adroitly. Indeed, the farm can now sell nearly a third of its own production in the marketplace. Everything grown and harvested from the field now will find its own consumer. Thus, the sale of potatoes, vegetables, fruits, berries and table grapes in the marketplace or through the consumers' cooperatives at pre-set prices is a substantial source for obtaining additional monetary resources which can then be used for expanding production, housing construction and the solution of other questions in the social development of the collectives.

[Question] Alesandr Ivanovich, by what arrangement will the produce sold by the farm at the pre-set prices be included in the plan for the farm? What documents for this should the farm submit to the state statistical organs?

[Answer] For payment for this production in fulfillment of the plan the kolkhozes and sovkhoses submit to the state statistical organs the records of the goods shipping invoices, which indicate the items and the quantity of the produce. The records compiled by the farm should be verified, depending on the channel of the sale of the produce, by the organizations of the consumers' cooperatives or the management of the kolkhoz market. This is all that is required for this.

[Question] You have stated that the instruction regarding the arrangement for payment for the produce in fulfillment of the plan has already been approved and put in place. But while it is going out to each kolkhoz and sovkhos a lot of time will be lost, and outside it is the middle of summer, the most beautiful time for vegetables.

[Answer] But it need not be lost and there is no need to wait until the instruction arrives. I have mentioned its more substantial positions. And if any farm manager would look again at the resolution of the CPSU Central Committee and the USSR Council of Ministers regarding the improvement of the economic mechanism of farming, then he would know how he should act even today.

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CSM: 1627/135

UDC 637.1:658.511.2

NEW DEVELOPMENTS IN USE OF MILK SUBSTITUTES EXAMINED

Moscow MOLOCHNAYA PROMYSHLENNOST in Russian No 8, Aug 86 p 1-3

[Article by V. S. Gordeziani, candidate of economic sciences--VNIMI [All-Union Scientific-Research Institute on the Dairy Industry]: "Optimal Utilization of Raw Material in the Production of Milk Substitutes"]

[Text] One of the leading trends in the optimal utilization of the resources of skim milk, buttermilk, and whey is the development of whole-milk substitutes for the young of farm animals. This is an important link in strengthening the integration of industry with agriculture.

The industrial production of whole-milk substitutes (ZTsM) is a new, rapidly growing branch of the dairy industry; it is of great importance for the national economy, and its top-priority task is to satisfy agriculture's need for full-valued feed products, obtained on an industrial basis, as well as the utilization of milk's freed-up resources for nutritional purposes.

The production volumes of such substitutes have been growing year after year: in 1985 enterprises of the USSR Ministry of Meat and Dairy Products turned out 272,600 tons of dried whole-milk substitutes and 1,055,000 tons of liquid products. This was facilitated by comprehensive research studies in the field of expanding the assortment, perfecting the engineering processes, and improving the quality of the substitutes, the creation of Soviet equipment, as well as planning and constructing specialized workshops and plants. Since 1971 the VNIMI and its affiliates, in conjunction with animal-husbandry institutes, have been engaged in working out this problem.

Serving as the protein base of most whole-milk substitutes is milk protein--an extremely valuable nutritional product. During recent years the VNIMI has considerably expanded scientific-research projects aimed at utilizing in the production of whole-milk substitutes milk whey in liquid, condensed, and dried forms, as well as proteins of non-dairy origin. Among the most effective ways to utilize whey, we must single out for particular mention the use of yeast for the biological synthesis of proteins, vitamins, and other biologically active substances. In contrast to other nutritional means, whey does not require any special processing, it contains a great deal of lactose, it constitutes a good energy-producing material, necessary for the development of many types of micro-organisms, including yeast, and it can be fed to livestock without separating the yeasty bio-mass.

The Belorussian affiliate of the VNIMI, in conjunction with the Micro-biology Institute of the USSR Academy of Sciences and the Belorussian Scientific-Research Institute for Animal Husbandry, has created a number of new feed products such as, for example, dried Bio-Whole-Milk Substitute, Promiks, and Provilakt, with the use of fermented milk whey, based on microbe synthesis. Foreign firms have manifested an interest in their technologies.

In the formulas for the dried Bio-Whole-Milk Substitute 60 percent of the dried substances of the skim milk are replaced by fermented and native milk whey, as a result of which on each ton of this product there is a saving of 5.7 tons of skim milk, equivalent to 160--180 kg of milk protein. Accepted as a producer is a strain of yeast which is capable of yielding a high output of bio-mass. Bio-Whole-Milk Substitute contains 25--27 percent of protein, of which 35--40 percent consists of yeast, 30--35 percent--casein, and about 30 percent--whey protein. With regard to its amino-acid composition, it is close to whole milk and fully satisfies the need of calves for the amino acids which are in the shortest supply for them--lysine and methionine. Industrial production of this substitute has been mastered by the Volozhin Butter-and-Whey Plant.

In conjunction with the KTB [Office of Engineering Design] of the USSR Ministry of the Meat and Dairy Industry, the technology of the Promiks liquid feed product has been accepted; serving as its basis is fermented whey. With regard to protein content, Promiks is close to skim milk, while with regard to vitamin content, it significantly exceeds skim milk. The presence in it of a large number of B-complex vitamins, as well as the full set of amino acids, facilitates a more economical expenditure of the basic feed ration and a reduction of the time period required to feed the livestock.

The dried feed product known as Provilakt is intended to replace dried skim milk in products for feed purposes, for example, in reconstituted milk. The protein in Provilakt contains the entire set of amino acids needed by animals. Substituting this product for SOM [dried skim milk] in feed products will save 210--220 kg of nutritional protein per ton of product.

Thus, feed products obtained by biosynthesis in milk whey have a high degree of effectiveness and can be recommended for widespread introduction. Organization of their production allows us to make optimal use of raw material in the dairy industry, whey, in particular, to free up milk protein for nutritional purposes, to obtain additional resources of commercial milk, and to economize on feeds in agriculture. Moreover, the non-waste technology of the above-indicated products ensures protection of the environment.

This production also has good future prospects because membrane processes are being introduced into the dairy industry, and the filtrate obtained in this connection can successfully serve as raw material for preparing products of biosynthesis.

Likewise possible in principle is the development of protein-and-fat products on condition that they are cultivated in a milk whey of lactose-oxidizing yeast, synthesizing the proteins and lipids; this is very important in the production of whole-milk substitutes.

The VNIMI has recommended to the industry a technology for producing a dried substitute for purposes of treating or preventing diseases. Its composition includes milk whey, fermented by acidophilus bacteria, producing substances which possess antibiotic properties, as well as propionic-acid properties producing vitamin B₁₂. A shortage of the latter in the feed rations leads to a violation of the protein-carbohydrate exchange and to a lowering of the animals' productivity.

Enriching the substitute with vitamin B₁₂, as well as the presence within it of live cells of the acidophilus bacteria, increases its biological value and facilitates a decrease in the gastro-intestinal diseases of calves. The substitute contains 17 percent fat, 24 percent protein, 7 percent moisture. Its acidity is no higher than 22° T, and its solubility index is no greater than 1 ml of moist precipitate. The number of acidophilus bacilli per ml is $8 \cdot 10^7$.

The economic effect as a result of reducing the production cost and obtaining additional profits from the sale of dried skim milk produced from the freed-up skim milk amounts to 51 rubles per ton. A normative-technical documentation (TU 49 1176-85) has been approved for fermented whole-milk substitute. This method has been recognized as an invention and is patented in 10 foreign countries.

Reconstituted milk has found widespread use in industrialized livestock-raising. However, the volume of its production is not large. In order to expand it along with the possibilities for a differentiated feeding of calves, depending upon their age, new types of this product have been developed with the inclusion in its composition of dried skim milk and whey (cheese-type or curdled), wheat and soybean flour, corn starch or potato starch, feed-type yeast, and methionine. The formulas provide for a content of 62 percent of milk components, including 50 percent of dried skim milk. This product contains the following percentages: 14.5--fat, 30--protein, 38.5--carbohydrates, 5--moisture, 7--ash, and 5--mineral salts. Acidity is no more than 21° T, and the solubility index is 1 ml of moist precipitate. The zootechnical evaluation of the new types of reconstituted milk, as conducted by the All-Union Animal-Husbandry Institute under the conditions of the Voronovo Livestock-Raising Complex, yielded positive results. The inclusion in the formulas of plant components and curdled whey did not have any negative effect on the calves' state of health or their weight gains. The profit obtained from the production of the new types of reconstituted milk amounts to 322 rubles per ton when obtained by the mixing method and 284.5 rubles per ton when obtained by the drying method.

Formulas have been created for dried, enriched, whole-milk substitutes (ZTsM-0), providing for the use of 65--77.5 percent of dried milk substances, including 50 percent of dried substances of skim milk. These substitutes have been enriched with protein components of non-dairy origin, such as, for example, wheat and soybean flour, protein vitamin concentrate (PVE), amino acids--lysine and methionine, vitamins A, D, and E. Included among the substitutes is a fat entitled Zatsgerol--a fat-phosphatide-vitamin concentrate. There is a huge proportion of protein in this substitute--at least 24 percent, as well as fat--19.5 percent, and cellulose--no more than 0.3 percent. The acidity is no more than 22° T, while the solubility index is 1 ml of moist precipitate. The profit

obtained from the production of 1 ton of ZTsM-0 ranges from 53.3 to 83 rubles, depending upon the formula used. Normative-technical documentation has been approved for an experimental batch of the given substitute (TU 49 1121--84).

With the existing norms, for each calf there is an expenditure, in addition to whole milk, of more than 500 kg of skim milk, which, on the whole, exceeds 20 million tons a year. This is a large reserve for increasing the production of dairy products for the population.

Consequently, the creation, based on milk whey and raw material of plant origin, of whole-milk substitutes which are as close as possible to it with regard to feed and biological values is an important trend in solving the problem of the optimal utilization of raw material.

The VNIMI has proposed a dried skim-milk substitute (ZOM), utilizing 60--80 percent of milk whey, as well as finely divided ingredients such as soybean and wheat flour, corn starch and potato starch. This skim-milk substitute contains 24.2 percent protein, 65 percent carbohydrates, including 35 percent lactose and 15.6 percent starch. The product's energy value is 1,358 kilojoules. It can be recommended for the direct milk-feeding of young livestock, as well as for inclusion in the composition of reconstituted milk or combined-feed-starters.

Patent No. 1010701 has been obtained for this method of producing skim-milk substitute.

The profit derived from producing 1 ton of this skim-milk substitute amounts to 141.6 rubles.

More than 50 percent of the milk protein obtained by the industry is returned to agriculture with skim milk, whey, and whey concentrates, as well as with skim-milk and whole-milk substitutes. The low price of skim milk (10 rubles per ton) has led to a situation whereby it is economically advantageous for kol-khozes and sovkhoses to use it for feed purposes; this has a negative economic effect on the national economy as a whole and has led to a non-optimal utilization of milk protein. As a result, the enterprises of the dairy industry are experiencing shortages of skim milk for turning out food products.

Reduction of the protein deficit can be facilitated, to a large extent, by organizing the large-tonnage industrial production of high-protein feeds, including substitutes utilizing plant components.

Development of such feeds has been widely attained in a number of industrially developed countries: Hungary, the GDR, the United States, France, Japan, and others. During the period 1985-1990 their output will reach 10--25 percent of the production level for milk substitutes.

The source with the best future prospects for obtaining rich plant protein is sown grasses, especially alfalfa; this is explained, above all, by the mass amounts obtainable and by its rapid rate of reproductivity.

Separating out the containable plant cells has made it possible to obtain concentrates of high biological value, containing 45--60 percent of protein with an amino-acid composition which is close to that of proteins of animal origin, with a wide set of micro- and macro-elements, with a large amount of carotene, vitamins E and B-complex, as well as containing 2--5 percent of cellulose. This opens up extensive possibilities for using the large resources of vegetative plant mass as a raw material for the production of high-quality protein-and-vitamin concentrate for feeding the young of livestock instead of proteins of animal origin, which are in short supply.

The up-to-date status of scientific-research developments in agriculture, as well as that of our country's machine building, allows us to create an industrial technology for producing protein concentrates out of green plants, using for this purpose either existing or new equipment.

At the present time appropriate projects are being carried out at the Central Scientific-Research, Planning, and Technological Institute for the Mechanization and Electrification of Livestock Raising (Zaporozhye), the Rostov-on-Don Institute of Agricultural Machine Building, along with the All-Union Scientific-Research Institutes on the Feeds and Comprehensive Problems of Machine Building for Feed Production and Livestock Raising.

The VNIMI has conducted investigatory research in the field of developing milk substitutes with protein concentrates made from green plants. At the Belgorod City Dairy an experimental section has been set up for obtaining protein concentrate from soybean grist, to be used subsequently in the production of whole-milk substitutes.

Creation of full-value, whole- and skim-milk substitutes based on the use of plant proteins in combination with milk whey will allow us to increase the commercial production of milk, as well as to utilize it more economically and effectively.

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CSO: 1827/156

GOODS PRODUCTION, DISTRIBUTION

STATISTICAL ANALYSIS OF RETAIL TRADE PROFITS

Moscow VESTNIK STATISTIKI in Russian No 8, Aug 86 pp. 1-16

[Article by I. Belyayevskiy, doctor of economic sciences, professor at Moscow Economics-Statistical Institute: "The Profitability of Trade: Statistical Indicators and Analysis"]

[Text] A large number of consumer goods are produced and placed into trade circulation in our country. The number of items names exceeds a million. From 1981 through 1985, group "B" industrial production has increased by 36 billion rubles, or an average of 3.8 percent a year. In the 12th Five-Year Plan it will increase by another 46-52 billion rubles, or 6.1-6.6 percent a year. In all the years of the 11th Five-Year Plan, the enterprises of state and cooperative trade have sold goods to the population in the sum of 1.3 trillion rubles. On the whole, this is 18 percent more than in the previous five-year plan. In the 12th Five-Year Plan, in accordance with the concept of accelerating economic and social development adopted by the 27th CPSU Congress, the average annual growth rate of retail trade must be increased to 103.4-103.9 percent, as compared with 103.1 percent in the 11th Five-Year Plan. The volume of commodity turnover in USSR state and cooperative trade, including public dining, comprised 324 million rubles in 1985, and by 1990 it should reach 380-400 billion rubles. This is 18-22 percent higher than the 1985 level. In accordance with the Basic Directions for USSR Economic and Social Development for 1986-1990 and for the Period to the Year 2000, our trade must increase the volume of retail goods turnover by 1.8 times at the end of the century as compared with 1985. The economic ties will be strengthened between the sphere of production and the sphere of commodity turnover, and contract relations of industrial and agro-industrial associations with trade organizations and enterprises will also be strengthened. The new edition of the CPSU Program states that "a current task is the continued development of trade relations. We must increase the reliability of economic ties and strive toward achieving a dynamic correspondence between supply and demand..."¹.

The need for continued development and increased efficiency of cost accounting and for effective application of the entire arsenal of economic levers and incentives presents the statistics of goods circulation with a responsible task--to improve the methodology of studying the socio-economic effectiveness of trade and the system of indicators of end results of commercial activity. Trade, like the other sectors of the national economy, is oriented toward intensification and overall increase in effectiveness.

The socio-economic process of satisfying individual demand occurs at the final stage of consumer goods circulation in retail trade. Distribution according to labor finds its material embodiment and conclusion. Trade services are organized for the public, and are manifested in various forms of social effectiveness of trade and determine to a significant degree the volume, make-up and level of socially necessary consumer costs. The reproductive cycle of part of the gross national product is completed, thereby ensuring the sale of group "B" products produced by industry and agriculture. (Here the actual expenditures for production and circulation of the product are really reimbursed on a national economic scale and the realization of part of the social net income obtains monetary content in the form of turnover tax). The continuity of monetary circulation is maintained by means of regular bank deposits of the monetary receipts of trade organizations in the Gosbank sections.

Trade is a complex economic organism whose accurate and uninterrupted functioning determines in large part the state and development of the national economy as a whole. In turn, the development of trade and its infrastructure is associated with the state of the financial system and its primary lever--profit. Undoubtedly, the remarks of M. S. Gorbachev presented in the CPSU Central Committee Political Speech to the 27th Party Congress regarding the role of commodity-monetary relations in the economy and their underestimation in the practice of planned economic management are true also for trade statistics, and specifically for the statistics of its profitability. The weakening of the finance-credit effect on the economy and the insufficient influence of the finance system on increasing its effectiveness were also noted. Developing the statistics of profit and profitability of trade is a current problem stemming from the decisions of the 27th CPSU Congress.

The natural question arises: what economic reimbursement does trade receive as a sector of the national economy which fulfills such important functions for the economy and for the social life of society? The basic principle of socialist economic management demands that the expenditures for the realization of goods be fully reimbursed and that a definite economic effect be created in the form of profit. A significant portion of this profit (around 40 percent of the profit from state trade) is deducted into the state budget, and the remainder is earmarked for further expansion of capital investments, for increasing turnover capital, for economic stimulation of labor in trade enterprises, for discounting goods, etc.

The absolute amount of profits of enterprises and organizations in USSR state and cooperative trade has an overall tendency toward growth. In the 11th Five-Year Plan the average annual profit of USSR trade comprised over 10 billion rubles, which was 33 percent more than in the 10th Five-Year Plan and 1.9 times more than in the 9th. In the USSR state budget for 1986 the profit from trade was defined in the amount of 10.6 billion rubles. The profit from sale of goods, i.e., from the basic activity of trade, comprised 77.6 percent of the overall sum of profit in the 11th Five-Year Plan. This was less than in the 10th Five-Year Plan (79.8 percent), but more than in the 9th (74.9 percent). These differences are associated with a certain slowing of the growth in goods turnover in the 11th Five-Year Plan as compared with the preceding one.

Although state retail trade, which in the 11th Five-Year Plan comprised 2/3 of all the retail goods turnover in the country, is on the whole profitable, a significant portion of the enterprises are operating at a loss. Thus, according to the testimony of M. I. Bakanov, on the whole throughout the system of state trade 30-35 percent of the enterprises are on the borderline of operating at a loss, or do operate at a loss.² However, the overall volume of profit from the sale of goods in state retail trade and in public dining has been increasing at a rather rapid rate.³ This is evidenced by the following data (cf. Table 1).

Table 1. Dynamics of retail commodity turnover, number of workers and profits of the state retail trade and public dining in 1971-1985.* (by five-year plans; averaged per year)

1) Пятилетка	2) Розничный товарооборот		3) Численность работников		4) Прибыль от реализации товаров**	
	5) млн. руб.	6) в % к предыдущему пятилетью	7) тыс. человек	6) в % к предыдущему пятилетью	5) млн. руб.	6) в % к предыдущему пятилетью
8) Десятая .	131 938	—	4 066	—	2 372	—
9) Десятая .	173 897	130	5 230	112	3 936	166
10) Одиннадцатая***	216 230	118	5 557	106	5 336	136

Key to table: 1 - Five-Year Plans

2 - Retail goods turnover

3 - Number of workers

4 - Profit from sale

of goods**

5 - Million rubles

6 - in percentages of the

previous five-year plan

7 - thousand workers

8 - 9th

9 - 10th

10 - 11th***

* "USSR National Economy in 1975", M.: Statistika, 1976, p 617, 637, 730; "USSR National Economy in 1980", M.: Financy i statistika [Finances and Statistics] 1981, p 425, 433, 508, 509; "USSR National Economy in 1984", M.: Finansy i Statistika, 1985, p 477, 488, 492, 567.

** Data on profits are presented by enterprises of basic trade systems, encompassing about 9/10 of the retail goods turnover of state trade, including public dining.

*** 1981-1984.

In order to determine the basic tendencies of development and to eliminate random, short-term fluctuations, the data presented in the table are grouped by five-year plans and computed as an average per year. In the years of the 11th Five-Year Plan the profits from the sale of goods increased by an average of 2.2 times as compared with the 9th Five-Year Plan, but as compared with the previous five-year plan its growth rate diminished. Generally, this corresponded to the

character of development of goods turnover, although the rate of growth in profits exceeded the corresponding rate in goods turnover by about two times. The empirical coefficient of elasticity, which reflects the connection between dynamics of profit and goods turnover and is computed according to the following formula:

$$\eta = \frac{\Delta y}{\Delta x} : \frac{\bar{y}}{\bar{x}}$$

where Δy and Δx respectively are the absolute increases in profit and goods turnover in the 11th Five-Year Plan as compared with the 9th and \bar{y} and \bar{x} are the average annual amount of profit and goods turnover respectively for the period 1971-1985, has shown that the growth in goods turnover in the amount of 1 percent has determined an increase in the sum of profit by 1.6 percent.

However, the growth of profit, although undoubtedly associated with the dynamics of goods turnover through the system of price formation, still is not so strictly determined. This is evidenced, for example, by the fact that in the period 1982-1984 the sum of profits in a year was less than in 1981 (especially in 1982, when it dropped by 13 percent as compared with the previous year), while goods turnover grew constantly, and specifically in 1982 increased by more than 3 percent as compared with 1981. Among the other reasons for change in profit we may name the review of the price structure (change in trade discounts on retail prices for a number of goods and price mark-ups for products in public dining), the dynamics of the retail price level, the shifts in the commodity structure of retail goods turnover, and the slowing in goods turnover which was observed in 1982. The non-fulfillment of plans for goods turnover for individual years of the 11th Five-Year Plan also had an effect.

As we know, the growth of profits depends directly on the relation of indicators of the dynamics of gross income and marketing costs. There is a definite contradiction manifested here: the growth of gross income depends on the change in the monetary receipts of trade with its unchanged structure by elements of price formation. At the same time, the dynamics of marketing costs is determined to a significant degree by the material-physical content of goods turnover, or in other words by the amount of goods sold. It is appropriate to note that the index of physical volume of retail goods turnover reflects not only the dynamics of the amount of goods sold, but also the change in goods turnover due to assortmental shifts in the structure of commodity group sales. Due to socio-economic reasons, and not in the least degree due to the growth of the buying capacity of the population, this factor is showing a certain tendency toward increase. For example, according to the data of the USSR TsSU [Central Statistical Administration], the sale of meat products for 1981-1985 in natural expression increased by 18 percent, and in a cost expression, in comparable prices--by 24 percent. We may conclude that the goods turnover increased by 5 percent due to assortmental shifts. This factor was expressed even more significantly in the sale of confectionary products--by 8 percent. The structure of the sale of cultural-domestic goods is also changing. Thus, the relative share of color televisions, which are naturally more expensive, increased from 28 to 46 percent for this same period, while the relative share of large capacity refrigerators (with storage capacity of 200 dm³ or more) increased from 16 to 45 percent. The task of statistics is to define the influence of this factor of assortmental shifts on the profitability of trade. Here the system of indices will find its application, reflecting the effect of the assortmental shifts.

The conclusion that state trade is on the whole profitable is a quantitative evaluation. A qualitative evaluation of this process is the degree of profitability or lucrativeness (sometimes the term "level of profitability" is used). In our opinion, profitability, which is a relative indicator, does not serve exclusively as a means of ensuring comparability of profit in dynamics, in trade-organizational and territorial comparisons, although, of course, it does fulfill an extremely important function. Profitability is an expression of the economic effectiveness of certain trade processes. For a statistical study of the regularities of goods turnover, it is important to have a specifically socio-economic interpretation of various indicators of profitability. It is necessary to have a system of profitability indicators which would enter as an independent block into the system of indicators of the socio-economic effectiveness of trade.

Thus, the effectiveness of all expenditures for the realization of goods reflects the indicator of profitability, computed as the ratio of profit to marketing costs. The effectiveness of the expenditures of living labor is characterized by the ratio of profit to the number of trade workers. Moreover, it seems to us that this indicator is more justified than the indicator of profit per 100 rubles of wages earned by trade workers. The indicator of profit, computed in relation to the commercial area or fixed capital, reflects the effectiveness of application of the material base in trade.

Statistical practice most often uses the indicator of profitability in percentages of goods turnover. There is a point of view according to which this indicator fulfills a purely comparative function, eliminating the factor of dimensionality of the trade enterprise or organization. Often it is interpreted as a comparative relation of two main economic indicators. However, goods turnover, especially retail, represents not only an economic effect, but also a social effect. It also characterizes the entry of the mass of goods into the sphere of consumption, as well as the expenditures of the buyers for obtaining the goods. Consequently, profitability, computed as the ratio of profit to retail goods turnover, shows what part of the realized purchase fund goes toward expanding the trade infrastructure, toward its social development, as well as toward all-state needs, i.e., towards all the purposes for application of trade profits. In other words, this indicator reflects the socio-economic effectiveness of the process of goods turnover itself.

The indicators of "goods turnover and profit" are plan indicators and occupy a central place in the system of planning trade activity. The application of the index of fulfilling plan profitability makes it possible to define the role of each of the components in the achieved level:

$$I_{\text{profit}} = \frac{n_p}{n_{\text{pl}}} = \frac{P_p}{P_{\text{pl}}} : \frac{O_p}{O_{\text{pl}}} = \frac{P_p}{P_{\text{pl}}} : \frac{O_p}{O_{\text{pl}}} = I_{\text{profit}} : I_{\text{turnover}}$$

where I_{profit} is the index (level) of fulfilling the plan of profitability; n is the profitability; P is the sum of profit; O is the goods turnover, and p and pl respectively are the plan and actual indicators. The index dynamic of profitability is constructed in an analogous manner.

We will represent the absolute growth of profit by the following formula:

$$\Delta P = n_p(O_p) - n_{\text{pl}}(O_{\text{pl}})$$

where $P=n_0$, including: a) by fulfilling the plan of profitability

$$\Delta P_{(a)} = n_{\text{пл}} O_{\text{пл}} - n_{\text{факт}} O_{\text{факт}}$$

b) by fulfilling the plan of goods turnover

$$\Delta P_{(b)} = n_{\text{пл}} O_{\text{пл}} - n_{\text{факт}} O_{\text{факт}}$$

The role of each of these factors in dynamics is analyzed analogously. Thus, the average annual growth in profit from state trade in the 11th Five-Year Plan as compared with the 9th, and which comprised 3.0 billion rubles, is determined by 48 percent by the extensive factor--the increase in the volume of commodity sales--and by 52 percent by the intensive factor--the growth of profit for every 100 rubles of goods turnover.

However, in comparing the profit and goods turnover, it is often forgotten that not all the monetary receipts of trade represent the result of its economic-financial activity. Of the overall sum of monetary receipts from state retail trade and public dining, almost 9/10 goes toward reimbursement of expenditures and formation of profit in the sphere of production and transport, as well as toward deductions into the state budget in the form of turnover tax. (Turnover tax comprises around 23 percent of the retail price in sectors of the light and food industry). Approximately 1.3 percent of the receipts reimburse the expenditures and form the profit of the wholesale sector. Only 10.4 percent are the result of the labor of trade workers and comprises the gross income of state trade and its retail sector. We thus come to the regular conclusion that the system of profitability indicators should include such an indicator in which the profit would be related to that part of the monetary receipts which is directly determined by the economic and economic-financial activity of trade, i.e., to the gross income. This would exclude the effect of production costs, turnover tax, etc. on the profitability of trade. Moreover, such an indicator would more clearly reflect the connection between profitability and price formation, since the elements of gross income (discounts, mark-ups) are fixed in the retail prices.

The analysis of the dynamics of profitability is an important aspect in studying the effectiveness of trade activity. Table 2 presents the indicators for the level and dynamics of profitability.

Table 2. Profitability of USSR state enterprises and organizations in retail trade and public dining in 1971-1985.
(by five-year plans; averaged per year)*

1) Пятилетка	2) Прибыль от реализации товаров, руб. в расчете на				3) Среднегодовая темпы роста рентабельности торговли, % в расчете на			
	4) 100 руб. товарооборота	5) 1 руб. валового дохода	6) 100 руб. издержек	7) 1 руб. затрат	4) 100 руб. товарооборота	5) 1 руб. валового дохода	6) 100 руб. издержек	7) 1 руб. затрат
8) Десятая .	1,9	10,8	31,7	309	—	—	—	—
9) Десятая .	2,5	24,1	31,8	733	105,6	104,0	105,2	108,1
10) Одиннадцатая .	2,7	25,7	31,7	900	101,9	101,6	102,2	106,2

Key to Table 2:

- | | |
|---|--------------------------------|
| 1 - Five-year plans | 5 - 100 rubles of gross income |
| 2 - Profit from sale of goods, rubles, computed per | 6 - 100 rubles of costs |
| 3 - Average annual growth rate of profitability (linked, %) | 7 - one worker |
| 4 - 100 rubles of goods turnover | 8 - 9th |
| | 9 - 10th |
| | 10 - 11th |

(USSR National Economy in 1975. M.: Statistika, 1976, p 730; USSR National Economy in 1980. M.: Finansy i statistika, 1981, p 508-509; USSR National Economy in 1984. M.: Finansy i statistika, 1985, p 567.

In the years of the 11th Five-Year Plan, all the profitability indicators rose significantly as compared with the level for the 9th Five-Year Plan. The profit per single worker grew at the fastest rate (by 1.9 times). The profit in percentages of marketing costs grew more moderately (by 40 percent), as did the profit in percentages of goods turnover (by 42 percent). The slowest growth was characteristic for profit in percentages of gross income (by 30 percent). Thus, there are significant differences in the change in profitability computed by different methods and determined by the different character in the development of socio-economic phenomena whose effectiveness is being measured.

As in the preceding table, the data on profitability are computed by five-year plans averaged per year. In the 11th Five-Year Plan the growth rate slowed down as compared with the preceding five-year plan. In studying the continuous series of dynamics of profitability indicators (which we cannot present here due to the limited scope of this article), it seemed that the periods of stable profitability (1970-1974) or insignificant growth (1975-1978) were replaced by two stages of sharp change: growth in 1979 and reduction in 1982. Here, the indicator of profitability in percentages of goods turnover turned out to be the most sensitive to fluctuation: in 1979 its annual growth rate comprised +27 percent, and in 1982 it was -17 percent. The least sensitive was the profitability indicator in percentages of the gross income: +24 and -13 percent, respectively. This fact may be viewed as a confirmation of the reliability and stability of the given indicator in studying the tendencies of profitability. The high effectiveness of expenditures of living labor is determined by the growth in labor productivity. In the 11th Five-Year Plan in state trade it increased by an average of almost 11 percent per year as compared with the 10th Five-Year Plan. The computed elasticity coefficient showed that a 1 percent increase in labor productivity entails a 2.6 percent growth in profits per single worker. The growth in profit in percentages of the gross income lags behind the dynamics of profitability in percentages of goods turnover. We must remember that the growth of gross income in 1971-1978 occurred at a much slower rate than the growth in goods turnover, and only beginning in 1979 did it begin to approach the dynamics of the goods turnover. The association of goods turnover with gross income, which many researchers point out, is certainly not linear. This is what determines the significant divergences in the indicators of profitability dynamics computed by both methods, and forces us to study each of them independently.

However, the practice of statistical analysis of the dynamics of profit and profitability does not consider an important factor which does not depend directly on the activity of the trade enterprises and organizations, i.e., referring to the change in the price structure, which is implemented in a planned and centralized order. Developing price formation and regulating the system of trade discounts and mark-ups leads to a change in the sum of profit, and consequently also of profitability, without additional expenditures of labor, economy of expenses, etc. The changes in profitability manifested in Table 2 are to a significant degree the result of the review of discounts and mark-ups. A statistical analysis, undoubtedly, requires a differentiated approach to evaluating the dynamics and fulfillment of the plan for profit and profitability, the identification and elimination of such factors. However, a paradoxical situation has arisen in trade statistics: the effect of the price factor may be excluded in the indices on goods turnover, labor productivity, or marketing costs, but in the indices of profit and profitability it cannot. Therefore it is impossible to objectively show to what degree the change in profit and profitability is determined by socio-economic and trade-organizational factors and to what degree by the development of price formation.

We believe that it is expedient to recompute the gross income in comparable standards of discounts (mark-ups) using the known formula for the index of physical volume, which in this case will take on the following appearance:

$$I_{\text{p}} = \frac{\sum \frac{i_n \cdot p_n}{\sum p_n}}{\frac{\sum p_n}{\sum p_n}}$$

where i_n is the individual index of discounts (mark-ups), i is the standard discount (mark-up) in percentages of the retail price q of the goods sold; p is the retail price, and npq is the sum of gross income (net of discounts and mark-ups).

To compute the individual and group indices of discounts (mark-ups) we can use the methodology of computing retail price indices, especially since all the trade discounts, like the retail prices, are fixed in the prices lists and other price forming documents. After recomputation the gross income, that the comparable discount standards, the marketing costs, which are also constant in comparable prices, rates, and tariff expenditures, need be deducted from the obtained sum. As a result, the obtained specific sum of profit in comparable standards of discounts and mark-ups will serve as the denominator in the index of physical volume of profit.

Examining the dynamics of profit and profitability as the result of the arrangement of goods turnover and growth of labor, material and monetary expenditures, it is expedient to show the dependence of the change in profit and profitability on the named factors with the aid of the empirical elasticity coefficient, whose formula is presented above. The corresponding computations show the following result: a 1 percent increase in goods turnover (in comparable prices) determined a 2.00 percent increase in the sum of profit. The profit computed per 100 rubles of outlays this was a 0.00 percent increase, and the profit computed per 100 rubles of gross income it was 3.00 percent. The elasticity coefficient of these two indicators of profitability was also computed based on the dynamics of labor productivity. The results computed 1.00 and 0.00 percent, respectively.

Profitability is a variable indicator. The factors causing variation in the profitability of trade organizations and enterprises may be labor productivity, structure of goods turnover, turnover rate of the goods, rhythm and quality of delivery, organization of the trade process, level of concentration of goods turnover, and others. The most important of these is the amount and level of marketing costs. However, we must remember that the costs do not have a correlational connection with profits, as do all those named above, but rather a functional connection. Therefore, it would be principally incorrect to include these costs in the models of profitability.

One of the indicators of trade organization--trade specialization--acts as an independent and serious factor determining the variation of profitability. Its effect is manifested through differences by types of goods in the standards for commercial discounts and, consequently, is expressed in the sum of the gross income and, through the differences in cost intensiveness of goods--in the sum of marketing costs. Thus, for example, the profitability at the sale of food products is on the average lower than that of sale of non-food items. Naturally, this is manifested more intensively in the indicator of profit per 100 rubles of marketing costs.

In the sale of non-food items the variation in profitability according to specialized goods comprised: by profit on 100 rubles of goods turnover--46.3 percent, for profit on 100 rubles of gross income--22.5 percent, and for profit on 100 rubles of outlays--53.5 percent. Thus, the variation in profitability, which is determined by the goods specialization, is rather significant. In order to smooth over the effect of this factor, it is expedient to normalize the fluctuation of the profitability indicators within the limits of one specialized organization. It is true that this factor is eliminated only to a certain degree, since specialized trade stores may differ in the structure and assortment of goods for sale.

The variation of profitability indicators was analyzed using the example of the specialized store. The coefficient of variation comprised, for profit computed per 100 rubles of goods turnover--27.0 percent; per 100 rubles of gross income--14.5 percent; per 100 rubles of marketing costs--41.1 percent, and per single worker--64.1 percent. The profitability indicator computed as the ratio of profit to gross income turned out to be the most stable.

Table 3. Dependence of profit and profitability of stores on the volume of retail goods turnover in 1964.

1) Approximate range of retail goods turnover in 1964, million rubles	2) Number of stores	3) Total profit in million rubles	4) Profitability indicators			
			4a) Profit per 100 rubles of turnover	4b) Profit per 100 rubles of gross income	4c) Profit per 100 rubles of outlays	4d) Profit per single worker
4) 10-20	3	20	1.2	2.7	4	1180
100-200	24	70	2.7	2.8	48	1180
> 200 < 700	25	200	4.2	3.0	72	1700
> 700 < 1000	42	81	1.9	2.6	60	1600
> 1000 < 1500	12	101	2.2	2.5	81	1600
11) > 1500 < 2000	10	140	2.8	2.4	80	2000
12) > 2000 < 2500	18	200	3.3	2.2	87	2000

Key to Table 3:

- | | |
|---|------------------------------------|
| 1 - Groups of stores* by amount of goods turnover, million rubles | 6 - per 100 rubles of gross income |
| 2 - Number of stores | 7 - per 100 rubles of costs |
| 3 - Profit for one store, thousand rubles | 8 - per single worker |
| 4 - Profit, rubles, computed: | 9 - Up to 2.5... |
| 5 - per 100 rubles of goods turnover | 10 - from 2.5 to 5.0 |
| | 11 - from 5.0 or more |
| | 12 - All stores |

* Including branches.

The very process of buying and selling of goods has a varying effect on profitability. The sum of the gross income depends on the volume of goods turnover (with a fixed value of trade discount). Moreover, the goods turnover of a store serves as an indicator of concentration, on which many other indicators of trade activity depend to a significant degree, including those which act as factors of profitability. Table 3 presents the results of the grouping of stores of the trade organization "Odezhda" [clothing] by the volume of retail goods turnover.

This factor had a rather strong effect on all the indicators of profitability. This confirmed the computed empirical correlational relation (η), which comprised 0.639, 0.672, 0.784 and 0.627 respectively, while the coefficient of determination (η^2) showed that the concentration of goods turnover explains 41 percent of the variation in profit on 100 rubles of goods turnover, 45 percent of the profit on 100 rubles of gross income, 62 percent of the profit on 100 rubles of marketing costs, and 39 percent of the profit per single worker. However, simulating the dependence of profitability in percentages of goods turnover on the goods turnover is associated with the risk of obtaining insufficiently reliable data. This is because the resultative and factorial indicators have a common basis. Too high of a degree of fluctuation in profit per single worker also reduces the reliability of the model. Therefore, we limited ourselves to simulating profitability in percentages of the gross income (y_1) and in percentages of the marketing costs (y_2). The character of the mutual association suggested the application of a semi-logarithmic level of regression, which reflects the growth of profitability with gradual slowing as uniform increase in goods turnover is obtained:

$$\tilde{y}_1 = -735 + 2141x; \quad \tilde{y}_2 = -417.1 + 1016x.$$

The standardization of regression coefficients with the aid of theoretical elasticity coefficients showed that with a 1 percent increase in goods turnover, the profit of a store computed per 100 rubles of outlays becomes 0.98 percent greater, and computed per 100 rubles of gross income--0.41 percent greater.

One of the necessary conditions for increasing profitability is the growth in the labor productivity of the trade workers. Unfortunately, this process, which is manifested in the growth of goods turnover per single worker, is still not everywhere accompanied by a cardinal increase in the mechanization of trade operations or by the improvement in the organization of the sale of goods. The assessment of trade enterprises performed in 1984 showed that 67% of the trade workers are engaged in manual labor.

Table 4. Dependence of profitability of stores on the labor productivity of trade workers in 1984

1)	2)	3)	4)	5)	6)	7)	8)
Groups of stores by goods turnover per single worker, thousand rubles	Number of stores	Sales area per one store, m ²	Profit, rubles, computed per:	100 rubles of goods turnover	100 rubles of gross income	100 rubles of marketing costs	one trade worker
9) 1 - up to 100	12	1112	12	63.0	27	171	
10) 100 - 150	7	1280	11	64.2	16	20	
11) 150 - 200	10	1330	11	72.8	27	1000	
12) 200 - 300	8	1414	10	72.0	27	1280	
13) 300 - 400	11	1440	10	78.2	27	1007	
14) All stores	58	1412	18	67.1	27	873	

Key to Table 4:

- | | |
|---|-----------------------------------|
| 1 - Groups of stores by goods turnover per single worker, thousand rubles | 7 - 100 rubles of marketing costs |
| 2 - Number of stores | 8 - one trade worker |
| 3 - Sales area per one store, m ² | 9 - Up to 100 |
| 4 - Profit, rubles, computed per: | 10 - from 100 to 150 |
| 5 - 100 rubles of goods turnover | 11 - from 150 or more |
| 6 - 100 rubles of gross income | 12 - All stores |

This significantly limits the degree to which the factor of labor productivity affects profitability. Table 4 presents the results of grouping stores of the same trade organization by volume of goods turnover per single worker.

The data presented in the table clearly reflect the dependence of profitability on goods turnover per single worker. The empirical coefficient of determination showed that this factor explains around 1/10 of the variations in profit in percentages of goods turnover, around 1/4 of the profit variations in percentages of gross income, 1/3--in percentages of marketing costs, and 4/5--in percentages per single worker. It is a notable fact that the variation in profitability is determined not only by the labor productivity, but also by the size of the store. By using the methods of multiple correlational and regressive analysis we were able to determine the joint and separate effect of the two named factors.

It was found that the profitability in percentages of marketing costs (y_1) was more closely tied with the named factors than was profitability in percentages of the gross income (y_2). The combined correlational coefficient comprised for the first indicator 0.611, and for the second--0.495. The model did not reflect the effect of the assortmental structure of goods turnover, the rhythm of deliveries, the time of goods turnover and other factors. This determined a relatively low value of the combined coefficients of determination, which explain in the first case 37 percent of the variation in profitability, and 25 percent in the second. The closeness in association of profitability with labor productivity (x_1) freed from the influence of the size of the enterprise (partial correlational coefficient), comprised for the first indicator 0.562

and for the second--0.381. The closeness in association with the size of the enterprise (x_2) relieved of the effect of labor productivity comprised 0.337 and 0.313 respectively. Thus, we may speak of the comparatively moderate effect of the named factors on profitability. The association of profitability in percentages of outlays is more noticeable than the profitability in percentages of gross income. The following regression equations were constructed:

$$y_{1,x_i} = 95,77 + 0,48x_1 + 26,25x_2;$$

$$y_{2,x_i} = 49,21 + 0,05x_1 + 3,95x_2$$

The pure coefficients of elasticity computed according to these equations showed that with increase in goods turnover per single worker the profit per 100 rubles of marketing costs becomes 0.39 percent greater, and per 100 rubles of gross income--1.43 percent greater. However, the increase in sales area by 1 percent leads to an increase in the named indicators by 0.17 and 0.09 percent respectively. The computed β -coefficients (regression coefficients in a standardized scale of variation) have made it possible to determine that the effect of the labor productivity factor on both profitability indicators is manifested more greatly than the factor of the trade enterprise's size: by 1.7 and 1.3 times, respectively. A verification of the importance of the models according to the F-criterion and the t-criterion confirmed their adequacy. Without trying to extend the results of analysis of a limited number of enterprises to the entire trade network, we nevertheless believe that we may draw a substantiated conclusion regarding the insufficiently effective influence of labor productivity on the economic effectiveness of trade. This is determined to a large degree by shortcomings in the organization of sales, as well as by the low quality of part of the supplied goods.

Expanding the statistical study of trade effectiveness, and specifically its profitability, and improving the methodology of its analysis will facilitate the successful economic effect on one of the main end results of trade activity.

FOOTNOTES

1. "Programma KPSS (novaya redaktsiya)" [CPSU Program (New Edition)], M.: Politizdat, 1986, p 33.
2. Cf.: Bakanov, M. I. et al. "Khozyaystvennyy raschet v torgovle" [Cost Accounting in Trade], M.: Ekonomika, 1982, p 31.
3. This article does not examine the problems of statistics of profitability of consumer cooperation, as well as wholesale trade, which have their own specifics and deserve separate treatment.

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CSO: 1827/157

GOODS PRODUCTION, DISTRIBUTION

MOSCOW FIRM COORDINATES EFFORTS TO PRODUCE QUALITY COATS

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 7 Jun 86 p 2

[Article by N. Pokorskaya, general director of the Salyut Association, Moscow: "To Sew a Good Coat"]

[Text] How does one sew a good coat? It would seem that the workers of the Salyut Sewing Association in Moscow know this well. Three thousand women's coats and fur coats leave the enterprise's production flows every day. Here they are assimilating 140 models a year. Production sales amount to 6 million rubles at contract prices. Quite recently, however, the inscription "Manufactured under license of the Loden Frei firm, FRG" appeared on the trade labels of several especially original coats. For this year, 30 models were bought that were developed by West German artists and designers and 150,000 articles will be released based on these models.

In short, the association workers began to sew good coats using the best world experience.

Today we tell how they are assimilating new equipment and technology at the enterprise and what problems face the collective.

It was a few years ago that the managers of the USSR Ministry of Light Industry got the idea of purchasing a license for the production of women's wool coats. And of course we supported it. There were no doubts about the advantages of this form of importation. In obtaining the manufacturing equipment and technology along with the models, we not only received the real opportunity to organize the production of high-quality coats in the shortest time possible. Along with the issue of the license, the firm revealed to us its own secrets for the design and creation of up-to-date models and technology. I will explain how important this is.

We are now buying 30 models from the West German firm. By the end of the five-year plan, after the completion of the reconstruction of the enterprise, all of our wool coats will be licensed. At the same time, purchases from Loden Frei will not increase but the assortment will be expanded. The fact is that all of the remaining models of articles that are being developed by our

domestic designers and artists must be at a level where the firm will agree to recognize them as "its own."

As you see, the tasks that we and our subcontractors face were and are complex.

The first thing that needed to be done was to install new equipment. They set it up during the leave of workers without stopping production.

I recall those days. The coordinating group for technical reequipment under the supervision of chief engineer L. Sinyuta acted efficiently. Line graphs were developed for all preparatory operations. Much had to be changed. The firm demanded that the cutting be issued only in a developed form, in special bins. Otherwise, it says, the quality is lost and the labor productivity declines. A proper demand. But our cutting and sewing production are in different buildings. The buildings are old with many floors and the machine tools and other machinery are crowded practically against each other. Not a single standard transport system is of any value. Along with a group of specialists of the Moscow Experimental Mechanical Plant, shop chief A. Brener and designer Yu. Zakharov developed and manufactured a nonstandard hoist and hand carts.

I would especially like to emphasize one thing: the people worked with genuine interest, sparing no efforts. Electrician M. Semenov, mechanic A. Klimov, and engineers I. Abramov and A. Moiseyev disappeared from the shops from early in the morning until late in the evening. Along with the German specialists, they installed equipment and learned to operate it on the spot. There were interpreters but the workers and specialists understood one another very well without them. Brand-new lines were extended literally under their eyes.

In leaving, the representatives of the firm took away not only the Russian souvenirs that were given to them by our workers but also the satisfaction of fruitful joint work: "We never thought that we would receive such a warm welcome from you." It can be said that the West Germans rediscovered for themselves our country and our people.

Not just the equipment changed but also the tasks and occupations of people. Under the new conditions, more workers were needed in some specialities and fewer in others. People had to adapt, psychologically as well.

"Now they have thought of everything! I worked for 30 years as an ironer and now sit down at a sewing machine." The manager of the fifth shop had to listen to such complaints not only from G. Dolgunova. How can one alleviate the labor period and help each person find precisely the work that he can and wants to do? They decided not to work haphazardly and to reject the method of trial and error, which was still frequently being used in such cases. They invited psychologists from Moscow State University. And they made no mistake. O. Chernysheva, for example, not only knows how to take into account the professional skills of the individual but also his willingness to accept what is new and capability to adapt to changing circumstances. It was thanks to

precisely this careful preparation that conflicts were practically eliminated in the shop.

In essence, the seamstresses had to master their occupation anew. Specialists from the firm participated in the training. The sequence of the performance of operations was changed and new devices appeared. The accuracy of performance attained tremendous importance. Under the old technology, minor defects could be corrected by ironing out the article. There is now no such hope--practically no irons remain. Under the new technology, they, just as scissors, turned out to be superfluous.

It must be said right out that before we did not have to sew such complex coats. A refined leather or velour trim, pleats on the sleeves, and an elegant stitching--by no means every deluxe workshop is capable of such things. But we sew. To be sure, the basic most difficult bundles had to be studied in an experimental shop before putting an article on line. This was done mainly by technologists I. Yankovskaya, G. Smaragdova and N. Buzyakova and deputy shop chief T. Makarova. They proposed and mastered the methods for the processing of the bundles and then trained seamstresses A. Obukhova, Z. Dymova, V. Shnabetdinova. After work, they studied with great interest. Probably because we all like these coats very much.

The introduction of the license puts greater demands not only on us but on our subcontractors as well. New technology required above all up-to-date high-quality fabrics. It is a matter not only of their outward appearance but also of their physical and mechanical properties. Here the demands of the firm are much more severe than our GOSTy [State All-Union Standards]. The fabrics must be soft, easy to drape, permit no shrinkage, and have a consistent width. To obtain such results, serious joint work with textile workers was necessary. We have many suppliers: the thin-cloth factories imeni Petr Alekseyev and Osvobozhdenyy Trud in Moscow, imeni Akhimov in Moscow Oblast, and the combine in Ulan-Ude. With the first three, we have long had well-organized contacts. Each of our artists is assigned to a particular textile enterprise. Under contracts for creative cooperation, they, along with fabric designers, develop fabrics for their own models. T. Pasturnova, for example, works with fabric designers of the Osvobozhdenyy Trud Factory and L. Tsutsayeva with the factory imeni Petr Alekseyev.

At the Osvobozhdenyy Trud Factory, they rather quickly developed the excellent "Likona" fabric for us. But these are still just the first steps. You will understand this if you go to our assortment room. We still cannot sew many of the purchased models--no material. To date, the textile workers have developed only five articles of fabric for licensed coats. But we are not even satisfied with all of these five.

It seems that it is time for not only the textile workers but also the workers of the Central Research Institute for Wool and the Central Research Institute for Sewn Goods to involve themselves in this work.

We still do not find complete mutual understanding among the managers of the Trud Fur Association and this is especially true of director M. Kiselev. The enterprise is pursuing one task, that of cutting the hide so that there is

a little less waste. The catalog of collars was issued 25 years ago and is reconfirmed every 3 years. And although there are more than 100 collars on the list, essentially they all come down to three modifications: shawl, with rounded corners and with sharp corners. One merely has to sew such a collar "for all time" to the most fashionable article and it will immediately smell of moth balls.

Foreign specialists completely rejected the articles of the furriers. They had to begin issuing more varied collars. But although our partners did get off dead center, they are making extremely slow progress. Right now there are about 300 licensed winter coats hanging in the shop without collars. The first batch of fur articles had to be rejected. We are awaiting the second. We have been waiting since March.

The acquiring of licenses gave new impetus to the creativity of artists and designers. And we paid a great deal of attention to the development of new models and the study of demand previously as well. If you visit our association, you will probably notice the schedule for the visiting of stores by enterprise specialists. It lists more than 30 stores in the capital and one of the specialists is assigned to each of them. They visit the sales personnel every month and talk with customers.

At the expanded meeting of the artistic-technical council of the Main Administration for the Sewn Goods Industry in Moscow, we showed a collection of our articles proposed for release in 1987. It was received with applause. The first success is especially dear.

STC
SIB: 1987/123

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AZERBAIJAN OILFIELD WORKERS REPORT 1986 COMMITMENTS

BAKU AZERBAIJDZHAHNSKOYE NEFTYANOYE KHOZYAYSTVO in Russian No 1, Feb 86 (signed 10
[From 10 Mar 86] pp 4-5

[Various reports under the rubric: "The Socialist Commitments of Azerbaijan
and Production Collectives for 1986"]

[Text] Azneft [State Association of the Azerbaijan Oil Industry] Association
blue-collar workers, engineers, technicians and white-collar workers of Az-
neft p/o [Production Association], just like the whole Soviet people, greet-
ed with great inspiration and creative enthusiasm the decision of the April
1985 CPSU Central Committee Plenum that advanced and validated the fully
developed concept of accelerating the country's social and economic develop-
ment, and, based thereon, of achieving a qualitatively new stage in Soviet
society.

In striving to greet the 27th CPSU Congress with shock work, Azneft p/o work-
ers have promoted the campaign for a further rise in labor productivity, a
saving of labor, material and financial resources, an improvement in work
quality, and the wide introduction of scientific and technical achievements
into production work.

The best results in solving tasks of economic and social development for 1985
were achieved by the collectives of the Karadagazneft [Karadag Oil Industry
Association] NGDU [Oil and Gas Recovery Administration], the 1000' Yama [Ab-
Bakinskikh Komissarov, the Azneftedorstroyremont [Trust for Road Construction
and Repair of Azneft p/o], the Central Base for Production Services, the spe-
cialized Office for the Operation of Submerged Electrical Oilfield Installa-
tions, and others.

The fulfillment of 11th Five-Year Plan tasks ahead of schedule was reported
by 138 collectives.

In striving to make a worthy contribution to strengthening the country's fuel
and power base, blue-collar workers, engineers, technicians and white-collar
workers of Azneft p/o are adopting the following socialist commitments for
1986:

Provide for recovering 3,000 tons of crude and 15.0 million m³ of gas above
the plan by further improving operations and intensifying work; and

Provide for the realization of 355,000 rubles' worth of industrial output above the plan and for the achievement of 355,000 rubles of above-plan profit.

In the Area of Oil and Gas Recovery

Raise formation productivity by 7,000 tons of crude above the task, using the new methods.

Introduce five inactive wells above the established task.

Take 100 above-plan geological-engineering measures and perform 40 above-plan operations to stimulate the bottom-hole area of wells.

Increase the operating time of wells between repairs by one day above the plan.

Raise the level of gas utilization by 0.2 percent above the plan.

Provide for a further rise in the quality of the underground repair and the overhaul of wells.

Systematically wage a campaign for increasing operating sophistication by improving the upkeep of workplaces, working conditions and worker recreation.

In the Area of Drilling and Geological Exploration

Provide for 1,500 meters of drilling above the plan, including 1,200 meters of operational and 300 meters of exploration drilling, by increasing labor productivity.

Put one production well into operation above the plan. Provide for the construction of 75 percent of the production wells by the brigade-contract method.

Open up one oil and gas area.

Refine the geological structure of Eocene deposits in the Tarsdallvar area for the purpose of guiding further exploration.

Make in 1986 an evaluation of the petroliferousness of Middle Eocene deposits at the Dzhafarly area.

In the Area of Construction and the Introduction of Production Capacity Into Operation

Bring the amount of uncompleted construction up to the standard level by concentrating capital investment at construction jobs that are due for early startup and by reducing the number of newly started jobs.

Increase labor productivity in construction that the association's construction organizations are performing by 1 percent over the plan.

In the Area of Scientific and Technical Progress

Obtain an economic benefit of 2.98 million rubles by raising the quality of developments, accelerating their use in production, introducing new equipment, progressive technology and mechanization and automation of production processes, and using inventions and innovators' suggestions.

Drill 1,000 meters more than the established plan for developing science and technology by using highly effective GN, GNC and GAC bits with sealed bearings.

In the Area of Saving Materials, Fuel and Power

By introducing technological processes that reduce the consumption of energy resources, replacing and modernizing operational and power equipment, and monitoring strictly the observance of optimal operating practices, save:

- 11.5 million kwh of electricity
- 1,100 gigacalories of heat energy, and
- 1,000 tons of standard-equivalent boiler-house and furnace fuel

Based upon the introduction of advanced experience into practice, the improvement of operating processes, and a reduction of losses and nonproductive expenditures, save:

- 100 tons of cement
- 100 m³ of timber and lumber
- 100 tons of metal
- 50 tons of automotive gasoline
- 100 tons of diesel fuel

In the Area of Improving the Working and Living Conditions and the Recreation of Oilfield Workers

Put 12,000 m² of housing space into use. Do 2.4 million rubles' worth of ornament and do 500,000 rubles' worth of work on furnishing workers' settlements with the amenities.

Transplant 10,000 trees and shrubs in the oil regions. Execute 1.2 million rubles' worth of measures for improving the sanitation and hygiene of production working conditions.

In implementing the decisions of the May 1982 CPSU Central Committee Plenum, take the necessary steps to improve workers' supply by strengthening the supply and equipment base of subsidiary farms and produce 90 tons (live weight) of meat and 500,000 eggs, and get harvests of 344 tons of grain and 154 tons of onions and vegetables.

In order to provide the association's enterprises and organizations with highly qualified personnel, raise the work qualifications of 50 workers while they continue their normal work, and give technical and vocational training to 30 engineers and technicians. Give instructions in economic efficiency to 12,000 people during the 1985-1986 training year.

The socialist commitments were discussed and adopted at Arnett p/a labor-collective meetings.

YU Kaspornftegazprom (All-Union Caspian Sea Offshore Oil and Gas Production Association)

Worker collectives of YU Kaspornftegazprom enterprises and organizations, in implementing the directives of the 24th CPSU Congress and ensuing CPSU Central Committee plenums, completed 1985 with a new contribution to the conquest and development of Caspian oil and gas fields.

After completing prospecting-type exploration at Caspian basin sites, the association's workers overfulfilled plan tasks of the 11th Five-Year Plan for increases in the reserves of oil (including condensate) and gas, greatly increasing their amounts over those of the preceding five-year plan.

The oil and gas-condensate fields Alyul'-more, Inent 5 Murta and Inent 10 Murta were discovered. Prospecting is proceeding at new and promising areas.

As a result of the execution of a major set of geological engineering work under it with in the existing inventory, an intensification of drilling and operations on field Inent 18 Aprilia wells from offshore deepwater structures platforms made by the same firms and of measures for improving organization and work intensities, the YU's collective successfully coped with 1985 plans for oil and gas recovery.

Crude and condensate recovery increased by 791,000 tons (8.9 percent) in 1985. Recovered more the plan with 11,200 tons of oil and 108.5 million m³ of gas, enabling overfulfillment of the increased commitments that were adopted in course of the 24th CPSU Congress. The five-year plan goal for gas recovery was met on 15 September 1985. Exceeded above the goal were 1.7 billion m³ of gas.

Construction organizations achieved definite positive results in creating production capacity for extracting oil and gas resources and in building housing and cultural and personal-welfare facilities.

Many laboring collectives of enterprises, departments and brigades fulfilled ahead of time the 1985 plan and the 11th Five-Year Plan as a whole. These included the winners of All-Union and republic socialist competition in honor of the 50th anniversary of the Stalinovite movement--the drilling brigades of G. Muratov (Inent 11 Murta 198 (explorative drilling administration)), A. Gusev (Inent 10 Murta 198 (drilling administration)) and A. Alder-Khanov (Sangoval 198), the oil and gas recovery brigades of S. Musayev (2000 Inent A. P. Serobroviskiy), Sh. Gofshaliyev (Production Association Inent 1 of CPSU Congress) and Sh. Tichov (Chelakennftegazprom p/a (Chelaken Offshore Oil and Gas Production Association)), the brigades for the overhaul and underground repair of wells of B. Akhmedov (Inent 10 Murta) and N. Niyimayev and A. Mekhraliyev (2000 Inent A. P. Serobroviskiy), the construction and servicing brigades of I. Shavskiy (Kaspornftegazprom (Trust for the Construction of Caspian Offshore Oil and Gas Industry Facilities)) and T. Shukerkhanov.

(Achermetkhanov (Achermetkhanov Trust for the Construction of Offshore Oilfield Facilities)), and others.

In being guided by the decisions of the April and October 1988 CPSU Central Committee plenums and by party principles on questions of accelerating scientific and technical progress and in striving to greet the 17th CPSU Congress worthily, blue-collar workers, engineers, technicians and white-collar workers of VPO Giproshchegornegazprom are adopting the following socialist commitments for 1989:

raise labor productivity by 2.1 percent over the plan and provide, on that basis, for an increase in the volume of realization of industrial output by 200,000 rubles' worth, including 150,000 rubles' worth by the time of the 17th CPSU Congress, through the more complete use of reserves for intensification and strengthening socialist work discipline;

increase output of crude and 70 million m³ of gas above the plan, including 10 million m³ of crude and 5 million m³ of gas before the 17th CPSU Congress, by applying systems for developing the field, by widely introducing new drilling equipment and technology, and by accelerating the assimilation of personnel;

achieve the enterprise profit for the industry of at least 300,000 rubles, including 200,000 rubles before the 17th CPSU Congress, by making better use of assets and fixed capital and resources, and by intensifying savings practices in all elements of production;

achieve 1,000 days of work above the plan and complete the construction of two wells above the plan by improving the technology for and organization of drilling, and reduce by 5 days the average time for the construction of a well, or 100 days in specialized drilling;

achieve the amounts of work spent on improving secondary and expanding tertiary reserves for recovering oil: recover 20,000 tons of crude above the planned amount, take through these measures, execute above the plan 50 geological engineering measures and 20 tests of wells, for a total benefit of 10,000 tons of crude;

comprehensively improve work in the active well inventory; and introduce 100 wells above the plan from the inactive inventory;

reduce the specific consumption of working agent per ton of crude recovered by 2.5 percent by improving operating practices for gaslift wells;

improve operating practices for the gathering, treatment, storage and repumping of crude and reduce losses of crude versus the contemplated standards by 10 percent;

conduct 10 wells and make current repairs of 125 wells, 5 and 70 of them, respectively, before the 17th CPSU Congress, by the application of equipment, the improvement of technology, and a bettering of organization of work, with the use of cost accounting; reduce the duration per overhaul and per current repair by an average of 5 percent; and increase productive time during repairs by 1 percent;

raise output quality and provide for the shipment of oil to customers only in accordance with the first and second group of the GOST's (State All-Union Standards);

by using rational ways and methods of doing the work and by using the brigade contract in construction, to 80,000 rubles' worth of construction and installing work and overhead staffs were hydraulic-engineering structures above the plan, 15,000 rubles' worth of it before the 27th CPSU Congress;

develop and introduce a set of additional measures for preventing pollution of the Caspian Sea: utilize completely formation water and effluent within the oil and gas recovery administrations; in 1986-1987 build and put into operation the first water-reservoir facility mentioned in, "Rebuilding of the Existing System for Purification Structures and for VFD (Maintenance of Forming Process) in the 9th (and 12th CPSU Congress";

haul above the plan 5,000 tons of freight - water-transport pools and 15,000 tons of cargo by maritime transport, 1,000 tons and 1,500 tons thereof, respectively, prior to the 27th CPSU Congress, through the effective use of water-vehicle and maritime transport; and operate the fleet 7,000 additional ship-days, including 1,000 ship-days by the time of the 27th CPSU Congress;

by introducing equipment and technology that save resources and by widely developing socialist competition for intensifying the campaign for saving and thriftiness under the motto, "Spend at least 2 days per year on saved material, oil and power resources," exceed the goal by saving: 2 million kWh of electricity, 200 gigacalories of heat energy, 200 tons of diesel fuel, 2,000 tons of standard briquettes and furnace-fuel equivalent, 80 tons of automotive gasoline, 100 tons of cement, 100 tons of rolled ferrous metal, 50 m³ of timber, and 12.5 tons of lubricants;

achieve an economic benefit of 7 million rubles by introducing inventor's suggestions and innovations and 2 million rubles from measures for technical progress, speeding up the pace of scientific and technical progress, raising the effectiveness of scientific research and development, and developing the inventor's and innovator's movement;

In 1986-1987 fully convert the ADOVE (Automated System for controlling technological processes and production) for the oilfield recovery of oil at PII and Gas Recovery Department No. 2 of 9th (and 12th CPSU Congress to microprocessor technology;

reduce the share of manual labor by at least 1.5 percent at the association's industrial enterprises;

complete the certification of workplaces in the industry in the first half of 1986;

continually improve ideological and moral indoctrination work in labor collectives; give economic-efficiency training to at least 25,000 people and train 1,200 new blue-collar workers; and raise the qualifications of 6,800 workers;

In accordance with the program for social development, and using incentive factors, introduce 10,000 m² of housing space; eliminate standby emergency

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12 NOVEMBER 1986

USSR Report

NATIONAL ECONOMY



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OFPS-UNE-86-002

12 NOVEMBER 1986

USSR REPORT NATIONAL ECONOMY

CONTENTS

FOREWORD

REGIONAL DEVELOPMENT

- Gosplan Supports More Local Participation in Economic Planning
(L. Foklov, et al.; PLANOVAYA KHOZYAYSTVA, No. 5, Jan 86) 1

MODELING, ECONOMETRICS, COMPUTERIZATION

- Union Republic Statistical Yearbooks Begin To Increase Operations
(VESNIYE STATISTIKI, No. 9, Jan 86) 13
- RSFSR Statistical Bureau, by O. GORVAD
Republic GVA Reports 13
24

AGRO-ECONOMICS

AGRO-ECONOMICS, POLICY, ORGANIZATION

- Economist Examines APK Intensification Planning Process
(V. Uzun; EKONOMIKA SELSKOGO KHOZYAYSTVA, No. 8, Aug 86) 31
- Roumble Assesses RAPO Operations Under New Terms
(EKONOMIKA SELSKOGO KHOZYAYSTVA, No. 8, Aug 86) 41

MAJOR CROP PROGRESS, WEATHER REPORTS

- Advice on Protecting Potato Crop
(L. Sukhomlynov, et al.; SELSKOYE VOZROJDENIYE, (Aug 86) 49

Intensive Grain Growing Practices Urged in Ukraine (SILSKI VISTI, 7 Aug 86)	52
On Protecting Sugar Beets in Ukraine Against Disease (S. Vovchuk, et al.; SILSKI VISTI, 6 Aug 86)	54
Winter Barley Harvest in The Crimea (V. Kovalenko; SILSKI VISTI, 3 Jul 86)	55
Natural Grass Acreage Neglected in Kirovograd Oblast (M. Uspalenko; SILSKI VISTI, 6 Aug 86)	56
Fighting Weeds in Ukraine (SILSKI VISTI, 15 Jul 86)	57

LIVESTOCK AND FEED PROCUREMENT

Uzbek Poultry Industry Shortcomings Noted (EKONOMIKA I ZHIZN, No 6, Jun 86; SELSKOYE KHOZYAYSTVO UZBEKISTANA, No 4, Apr 86)	58
Production Deficiencies, by G. Korniltseva	58
Remedial Measures, by B. Piskunov	62

CONSTRUCTION

POLICY, ORGANIZATION

Views on Legitimizing 'Private' Services Sector Expressed (Geliy Ivanovich Shmelev Interview; SOTSIALISTICHESKAYA INDUSTRIYA, 24 Apr 86)	67
Klyuyev Discusses Restructuring of Light Industry Sector (V. G. Klyuyev Interview; EKONOMICHESKAYA GAZETA, No 36, Sep 86)	72

CONSUMER GOODS, DOMESTIC TRADE

HOUSING, PERSONAL SERVICES

Efforts Made To Improve Tourist Centers in Far East (A. Kurbatov; TRUD, 17 Aug 86)	78
---	----

ENERGY

FUELS

Oil Field Construction Expenditures Examined (BYULLETEN STROITELNOY TEKHNIKI, No 3, Mar 86)	82
--	----

PIPELINE CONSTRUCTION, OPERATION

Planning of Natural Gas Pipeline Repairs

(V. V. Shirayev, Ya. I. Kozlovich; ZHITEL'SKIYE I
KOMMUNALNOYE KHOZYAYSTVO, 3-5, May 86) 89

HUMAN RESOURCES

Article Discusses Quality of Life Proposed by Party

(Yu. Volkov; PRAVDA, 17 July 86) 90

EDUCATION

Education Deputy Minister Censures Evening School Program

(V. D. Shadrikov; UCHITEL'SKAYA GAZETA, 9 Sep 86) 91

DEMOGRAPHY

Uzbek CSA Officials on Preparations for All-Union Census

(Gennadiy N. Kvon Interview; EKONOMIKA I STATISTIKA, No 7,
Jul 86) 100

1985 Demographic Encyclopedic Dictionary Critiqued

(G. Kildishev; VESTNIK STATISTIKI, No 8, Aug 86) 101

TRANSPORTATION

RAIL SYSTEMS

Legal Changes Proposed To Combat Rail Freight Mishandling, Theft

(D. Trusev, V. Sedulin; SOVIETSKAYA ZAKONNOST',
No 7, Jul 86) 107

2M62 Diesel Locomotive Development

(Yu. V. Kondrakhin; ELEKTRICHESKAYA I TEPLOVOZNAYA TYAGA,
No 7, Jul 86) 114

Improved DR1A Diesel Commuter Train Model

(V. F. Gorbenko; ELEKTRICHESKAYA I TEPLOVOZNAYA TYAGA,
No 7, Jul 86) 117

MARITIME AND RIVER FLEETS

Briefs

Bulk Carrier Arnold Sommerling Operational	120
Dneper-Bug Canal Reconstruction	120
New Oil Shipment Line	120
Auto Carrier Aleksandr Starostenko Operating	120
New Far East Oil Shipment Line	121
Ore Carrier Boris Gordeyev Launched	121
New Caspian Oil Tankers	121

REGIONAL DEVELOPMENT

GOSPLAN SUPPORTS MORE LOCAL PARTICIPATION IN DEVELOPMENT

Moscow PLANOVoye KHOZYAYSTVO in Russian No 6, Jun 86 pp 96-102

[Article by Doctor of Economic Sciences L. Kozlov, chairman of the USSR State Planning Committee Council for the Study of Productive Forces; Doctor of Economic Sciences V. Lyubovnyy, head of a department of the RSFSR State Planning Committee's Central Economics Research Institute; Candidate of Economic Sciences G. Batkilina, section head; and Candidate of Economic Sciences R. Bespechnaya, acting section head, in the section "Territorial Planning and Regional Economics": "Improving the Planning and Management of Territorial Development"]

[Text] The steady increase in the role of territorial management and planning in the overall process of improving the guidance of the national economy is an important function in the present stage in our society's development. At the 27th CPSU Congress the task was set for territorial agencies of taking an active part in solving the key problems of the country's economic and social development.

For the RSFSR the problems of territorial agencies' effective participation in development of the unified economic complex, on the one hand, and of the harmonious development of oblasts (krays, autonomous republics), administrative regions and cities, on the other, are urgent. This due to the extensiveness of the territory and its complex territorial administrative structure, diverse natural, climatic and economic conditions, and specific nationality features.

In recent years a number of measures have been carried out to enhance the role of the territorial level of management. The legislative acts and directive documents that have been adopted have made it possible to create a legal basis for stepping up the work of local Soviets in the planning and management of territorial development. Significant changes have taken place in the structure of the local Soviets' executive bodies, changes which are aimed at enhancing the effectiveness of the management of the development of the economy under the Soviets' jurisdiction. The authority of local Soviets to determine the structure and staffing of their executive bodies has been expanded. The legal status of the planning agencies has been strengthened and their authority enhanced. Thus, oblast and kray Soviet executive committees have been given the authority for formation of the staff subdivisions of the

enterprises and enterprises of the kind that is subordinate to them. They may also decide, with the consent of the Ministry of Finance, the structure and limits of the administrations and departments of the executive committees of kray, oblast, rayon, city and rayon Soviets within the limits of the national and kray funds specified for administrative and managerial personnel of the various levels of administration of a kray or oblast, and in accordance with the salary scale. Changes in the staffs of the aforementioned departments can be made without the consent of the Ministry of Finance within the limits of the national and kray funds specified for administrative and managerial personnel. Kray and kray Soviet executive committees have received the right to set the number of administrative and managerial personnel for enterprises, institutions and organizations under local jurisdiction.

The first deputy of the chairman of planning committees, was in autonomous republics and simultaneously the vice-chairman of the autonomous republic Councils of Ministers, and in oblasts, krays, cities and rayons are simultaneously vice-chairmen of the corresponding Soviet executive committees, the latter simultaneously elected.

In addition to administrative bodies, various public and collegial bodies, which are usually set up under local economic-management agencies, play a certain role in territorial management. Such forms of activity as directors' councils, technical and economic councils, councils for promoting technical progress, and commissions and public departments of local Soviet executive committees have become widespread.

The practice of drafting plans for comprehensive economic and social development in autonomous republics, krays, oblasts and a number of large cities of the Russian Federation is increasingly taking hold. This experience has been treated fairly completely in the press.⁽¹⁾ Coordination of the efforts of enterprises under various departmental jurisdiction in solving national problems manifests itself in diverse forms. Thus, enterprises pool their efforts for the construction of apartment buildings and cultural, consumer-service and municipal-service facilities, and in such cases the function of single client is performed either by the local Soviet in the person of its capital-construction administration (department) or the enterprise that does the bulk of the construction. Positive experience in coordinating the activities of enterprises in planning the production of consumer goods has been gained in Dnepropetrovsk, Saratov and other oblasts. An example of solving the problem of organizing production along territorial lines is the creation of rayon and oblast agro-industrial associations.

Despite the expansion of the local Soviets' authority and certain successes in the planning of territorial development, this work must be fundamentally improved. This was discussed at the 27th CPSU Congress.

V. I. Voronilov, chairman of the USSR Council of Ministers, noted in his speech that, "improvement of the territorial approach in planning and management requires an improvement in the work of the Soviets and the fullest utilization of the authority granted them. Unfortunately, many local Soviets and their executive committees are still not manifesting the proper initiative and persistence in this connection. It is also necessary to work out the sort

of economic mechanism whereby the territorial bodies could have a share in the efficient work of all the enterprises located within their regions and the branches would receive a real return from the constructive development of oblasts, cities and rayons."(2)

Along with stepping up the work of the local Soviets, it is necessary to surmount negative tendencies in the work of the branch ministries and departments, tendencies which are impeding the comprehensive development of territories and making it more difficult for enterprises of different departmental subordination that are located within them to cooperate. In fact one must add the urge of the ministries and departments to function autocratically. The development of ministerial and departmental materials-production, auxiliary-production and maintenance and repair facilities results in an unwarranted concentration of production and population, the irrational use of territorial resources and deterioration of the environment.

The ministries and departments have funds at their disposal not only for the development of production facilities in their particular specialties but also for the construction of auxiliary and service enterprises and reproduction facilities. Enterprises and organizations that perform service, auxiliary functions and are highly territorial in nature (transport, construction, power-engineering, etc.) are under the jurisdiction of ministries and departments. Thus, for example, the main-vehicle fleet of the Ministry of the (transport) ministries is substantially smaller than that of other ministries and departments.

The branches' leading role in the resolution of such social problems as the development of housing and municipal services, the construction of kindergartens, preschool institutions and cultural and consumer-service facilities, etc. frequently results in the adoption of narrowly considered departmental decisions and increases unwarranted differences in living conditions between persons working at enterprises under different administration and in different regions.

The system of plans within a territory is fairly complex today. In addition to plans of economic and social development, the kray, oblast and city Soviets draw up plans for the production of local building materials, the production of consumer goods, and the construction of housing, municipal services, cultural and consumer-service facilities. In contrast to federal plans, territorial plans usually are not mandatory in nature, since their indices are not backed up by guaranteed resources and are not adequately coordinated in terms of deadlines and the entities responsible for fulfilling them. For example, at the city level the Soviets control only 20 to 30 percent of capital investments in development of the production sphere, and the rest is controlled by the ministries and departments.

Despite achievements in developing the methodology and practice of territorial planning, they still do not yet fully ensure the systematic development of the economies of the union republic, economic relations between territorial entities.

In order to improve the methods and organization of the drafting of territorial plans, on 7 May 1983 the USSR State Planning Committee ratified Standard Methods Guidelines for the Drafting of Plans for the Economic and Social Development of Autonomous Republics, Krays, Oblasts, Okrugs, Rayons and Cities. In an examination of the work of the Soviets in one oblast that took place in June 1984 in the Presidium of the USSR Supreme Soviet, the need to improve the existing methodological basis of territorial planning was disclosed. In this connection the USSR State Planning Committee prepared a new edition of guidelines for drafting plans for the economic and social development of oblasts (krays), rayons and cities and a model list of indicators that are recommended, along with plans for the economy under executive committees' jurisdiction, for approval by sessions of the appropriate Soviets and adoption by their executive committees.

It is apparent that accelerated development of the economy requires that appropriate clarifications and amendments be made periodically in methods materials. The task of both research and planning agencies is the timely identification and reflection of changes that are taking place. Thus, it has already become necessary to include qualitatively new items in the sphere of territorial bodies' planning activity, such as indices of urban and rural settlement, which must be included in plans for the development of oblasts (krays), and indices of interbranch and interdepartmental cooperation which must be broken down into the specific forms that are characteristic of regions of different levels, etc.

The ministries, departments, associations and enterprises bear neither local nor economic responsibility for ignoring the interests of a territory or failing to take them adequately into account when they resolve production questions, or for failing to carry out measures specified in plans for the economic and social development of oblasts (krays, autonomous republics) or cities. The lack of an effective system of economic levers and incentives also limits the ability of the local Soviets to exercise the authority granted to them in the administration of territories. There are shortcomings in the information base, and there is no system of social and general-economic normative rates for use in planning based on actual resources for the period being planned.

In most cases, the structure of the agencies and apparatuses of the local Soviet executive committees does not accord with their increased authority and the expansion of the sphere of their activities: there are no special subdivisions concerned with questions of transportation, environmental protection, etc.; the executive committees' functional departments continue to concern themselves primarily with the facilities under their direct jurisdiction, etc.

The shortcomings that have been noted in the management of territorial development limit the possibilities for regions to take part in the acceleration of the country's socioeconomic development. The CPSU Central Committee's political report to the 27th CPSU Congress stated: "while making justifiable demands on the Soviets, it is impossible not to see something else, as well: in the resolution of a number of issues of local importance

their capabilities are still limited, and there is excessive centralization in matters that are by no means always evident from the center and can be much better resolved at the local level."(3)

In proceeding from the demands placed on the territorial aspect of management at the present stage, it is essential first of all to clarify the content of territorial development and delimit functions between branch and territorial management agencies. Such clarification should proceed from the basic goals of branch and territorial development.

Naturally, attaining the goals of territorial development and providing for the comprehensive economic and social development of regions cannot be ensured solely by territorial management agencies but requires an integration of their efforts with those of branch management agencies.

In present conditions the union republics and the administrative units that belong to them can perform primarily the following functions:

- creating favorable conditions for the reproduction of the population and of labor resources;

- developing the agro-industrial complex and a large group of repair and maintenance facilities, and producing a substantial amount of consumer goods and interbranch output;

- carrying out nonspecialized construction work;

- forming and ensuring the functioning of the social and production infrastructure;

- carrying out the training and advanced training of personnel, and economically utilizing labor and other multipurpose resources, as well as secondary resources;

- rationally utilizing natural resources, preserving and improving the environment, etc.;

- improving the settlement of residents in accordance with the territory's comprehensive economic and social development.

The purpose of branch development, in general, consists of satisfying social needs for output of the appropriate type and quality, accelerating scientific and technical progress in the country, and introducing its achievements into production, whereas the purpose of territorial development consists in ensuring the comprehensive economic and social development of a union republic, large economic region, oblast, city, or administrative region, as well as creating favorable general economic conditions for the functioning of production facilities.

An urgent task with respect to territorial planning is to improve it in accordance with the decisions of the 27th CPSU Congress. In this connection it is important, along with clarifying the functions of territorial plans in the overall system of state planning, to provide for the formation of a unified system of preplanning and planning studies within a territory by means of the more complete coordination of existing documents (the regional aspect of the Comprehensive Program of Scientific and Technological Progress; territorial plans for the development and siting of productive forces; regional settlement plans; plans for the economic and social development of union republics, autonomous republics krais, oblasts, rayons and cities; and

special-purpose regional comprehensive programs), as well as the addition of similar links to them, such as basic guidelines for the economic and social development of autonomous republics, krais, oblasts and, eventually, cities and rayons.

The accomplishment of these tasks requires of economic science the solution of theoretical problems and the development of methods approaches that make it possible to substantiate general principles and common indices for all documents and identify the specific spectrum of problems to be solved at various time stages and territorial levels.

The system of preplanning and planning documents developed for a territory should correspond to the long-range guidelines for the development and siting of the country's productive forces, providing the maximum contribution of each region to the accomplishment of national-economic tasks.

A necessary condition for the concrete elaboration of the issues that are subject to planning in various regions is clarification of the powers of local agencies of various levels. For example, on the level of the autonomous republic, krai or oblast what should be provided for, first of all, is road building and the development of transportation, communications and other types of services for facilitating intercity and interterritorial connections; while on the level of the city what should primarily be provided for is the development of urban transport and utilities and territorial improvement.

In order to establish close cooperation between the branch and territorial levels of planning it is necessary for all ministries and departments to draw up preplanning and planning materials with territorial breakdowns. It is necessary to introduce a procedure that would be mandatory for the ministries and departments for coordinating the draft plans of enterprises and organizations with republic and, especially, local agencies, as well as for taking the proposals of Soviets into account and implementing them. Improvement of the normative base, especially for development of the social and production infrastructure, should contribute to the scientific substantiation of territorial planning. A great deal of attention should be given to the more precise definition and substantiation of special-purpose normative rates for territorial development, as well as to the development of long-range, medium-range and short-range normative rates, the implementation of which would be provided for during the appropriate planning periods.

An important area is the active utilization of progressive methods of territorial planning, in particular, the use of mathematical-economic methods that make it possible to carry out multivariant calculations necessary for the selection and solution of problems, as well as the widespread introduction of territorial automated management systems and automated planning calculation systems developed in close coordination and on a common methodological basis with analogous systems at the branch levels. A substantial effect should be produced by the broader use of the balance method, especially in evaluating a territory's resources, both for individual territorial units and, when necessary, for the joint utilization of resources (for example, for oblasts and the oblast centers--the joint utilization of water and fuel and energy .pa

resources, certain types of output in general use in the machinery industry, local building material, etc.).

In order to improve the level of information available for territorial planning and the effectiveness of the monitoring of the implementation of plans, it would be a good idea to introduce new forms and indices of statistical reporting on the level of oblast, rayon and city (for example, for environmental-protection measures, warehouse and storage facilities, etc.), to expand information on social questions at the oblast and city levels, and to develop, through the efforts of oblast statistical administrations and their computer centers, composite statistical forms for rayons and cities reflecting the basic areas of their development. It could be extremely useful to conduct periodic surveys on issues that are important for territorial planning and not reflected in regular statistical reports (the social structure of the population, commuting, working conditions, fixed production and nonproduction assets, etc.). Provision should also be made for instituting regulatory documents for territorial units (with mandatory regular updating) and for compiling for oblasts, rayons and cities (and city rayons) ongoing statistical data that would make it possible to monitor plan fulfillment for the period covered by the data and to supply the necessary information to the departments engaged in drawing up long-range territorial plans.

Consideration should be given to the scale of the use of comprehensive, special-purpose programs in the practice of territorial planning. In connection with the improvement of the economic mechanism and the combination of branch and territorial interests, the development of programs will be effective in solving national-economic problems, especially those of an interbranch and interdepartmental nature, when traditional planning methods cannot produce the required effect.

The participation of territorial agencies in the solution of problems within their jurisdiction should be stipulated in normative and legal organizational acts and find expression in regulatory documents on both the territorial and branch levels. To this end, the statutes on the ministries and departments should reflect, along with branch objectives, their functions, rights and duties at the territorial level. At the same time, the branch dimension should be enhanced in normative acts pertaining to territorial bodies by reflecting their functions, rights and duties in the management of branches, enterprises and organizations of local and dual subordination. All this will create an objective basis for combining and regulating branch and territorial interests.

The growth of the economic potential of administrative territorial formations and the increased complexity of national-economic connections gives a high priority to the task of improving cooperation among the enterprises and organizations located within a given territory (regardless of their subordination).

Interbranch cooperation with the participation of local Soviets can be directed at the following: the creation of facilities connected with environmental protection; the joint acquisition and utilization of equipment

used periodically; the production of articles; the establishment, in accordance with the territorial principle, of centers for the rental of monitoring and measuring instruments and unique apparatus and equipment; the formation of combined research and design subdivisions, computer centers, laboratory buildings for shared use, combined training complexes for the training of workers in the most common occupations, and laboratories and offices for vocational guidance and vocational choice for students in the upper grades and secondary-school graduates; the organization of shared warehouse and storage facilities; and the collection and joint recycling of secondary raw material.

A legitimate question arises: just who at the local level is supposed to coordinate the interests of enterprises of diverse subordination among themselves and with regional interests? To do so from the center is complicated and, most importantly, not always efficient. It is becoming increasingly obvious that the functions of interbranch and interdepartmental cooperation should be assumed by the union- and autonomous-republic Councils of Ministers and by the kray, oblast and city Soviet executive committees.

The practice of territorial management has already proposed several interesting forms of organizing cooperation among the associations and enterprises of various ministries and departments, which were discussed above. The coordination of the activities of these organizations is carried out by the autonomous-republic Councils of Ministers and kray, oblast and city Soviet executive committees. In order for the accumulated experience to be adopted on a wide scale it is necessary to create certain economic and organizational conditions and carry out appropriate experiments.

In providing for the comprehensive development of republics, krays, oblasts, cities and rayons, the role of the local Soviets' standing committees should be enhanced. By identifying problems and drawing public attention to them, they can become a significant lever in increasing the activity of territorial management.

Organizing functions in the management of a territory are performed by local party committees, whose role in a territory's economic life should be spelled out more concretely. This has been pointed out in a number of party documents.

The CPSU Central Committee's political report to the 27th CPSU Congress notes: "In improving the forms and methods of guidance, the party resolutely opposes confusion of the functions of party committees with the functions of state and public agencies. This is not a simple question. In life it is sometimes difficult to identify the line beyond which party supervision and organization of the accomplishment of a practical task turn into excessively close supervision, or even a taking over of the functions of state and economic-management agencies." (4)

In connection with the shift to new methods of economic management and the more precise definition of general plans (or plans) for the management of the industrial branches and certain other branches of the national economy, the role of enterprises and production associations is increasing substantially,

as is their collectives' (regardless of departmental affiliation) interest in and responsibility for the comprehensive development of the territory on which they are located. Therefore, it is necessary to adopt certain measures at both the branch and territorial levels by way of spelling out in legal, organizational and economic respects the rights and duties of enterprises (associations) and territorial management agencies with regard to the effective participation of a region's economy in the development of the unified national-economic complex, on the one hand, and the comprehensive economic and social development of the given territory, on the other. It should particularly be noted that neither the 14 July 1983 decree "On Additional Measures for Expanding the Rights of Industrial Production Associations (Enterprises) in Planning and Economic Activity and Enhancing Their Accountability for the Results of Work," nor the 12 July 1985 decree "On the Widespread Introduction of New Methods of Economic Management and the Enhancement of Their Influence on the Acceleration of Scientific and Technological Progress" provides for such an approach.

In working out an appropriate organizational and economic mechanism, a precise procedure for coordinating branch and territorial plans must be provided, as already pointed out. In order to clarify the branch subject of coordination, it is necessary to evaluate the practice of distributing enterprises (in accordance with their national-economic and regional significance and territorial location) among administrative units of various levels. Such a practice already exists in a number of oblasts of the RSFSR--Kemerovo, Kirov and others. It stipulates that at the oblast (kray) level plans are coordinated by Soviet executive committees with large enterprises under union subordination and the head enterprises of production associations, while plans are coordinated by rayon (city) Soviet executive committees with enterprises under local subordination and the production units of associations. The final coordination of plans with the ministries and departments, especially when they contain fundamental disagreements, is carried out by the planning committees of autonomous republics, krays and oblasts. In addition to working out in legislative acts the procedure for and guarantees of the coordination of branch and territorial interests and a regulation for the work of branch agencies with the proposals of local Soviets, it is necessary to work out procedures for the participation of planning committees at all levels in this work.

Special attention ought to be given to determining the place and participation of enterprises belonging to production associations in the solution of regional problems. Today if they function within associations under union or republic subordination the rights and capabilities of production units are, in a number of cases, limited, and decisions on their participation in the social and economic development of the rayon, settlement or city in which they are located require the consent of their head enterprise. This happens despite the fact that existing normative acts provide rather broad economic-accountability rights for production units, rights which they may exercise. In view of the fact that more than 10 years has passed since the establishment of most production associations, it seems necessary to draw up a standard statute on the production unit that would reflect, among other things, the questions of their cooperation with local bodies.

It is urgent to establish the optimal correlation within the branches of the national economy and industry between large, medium-sized and small enterprises and to determine the role and place of small enterprises in development of the economy. Small enterprises that are rationally organized and outfitted with up-to-date equipment can effectively complement the production functions of large and medium-sized enterprises. It is necessary to identify the small enterprises (on the basis of accepted criteria) and to make an analysis of their work in all branches of the national economy, as well as in the autonomous republics, krais and provinces, and to outline measures that will provide for their active participation in the intensification of the national economy.

Many questions pertaining to management of the enterprises and organizations of branches and spheres of activity that are represented within the territory of an autonomous republic, krai, oblast or city should be resolved within the framework of territorial administrative formations. A special-purpose program or a general plan for improvement of the management of the appropriate territory's economy should be used as generalizing documents in this case. Such a program should be based on more precisely defined functions of branches, subbranches, production associations, enterprises and organizations, and of their role and form of cooperation in the development of a territorial economic complex. The organizational structures of the territorial management agencies should also be represented here. Measures providing for achievement of the results projected for five or 10 years should be included in plans for the comprehensive economic and social development of the administrative territories on which they will be carried out. It is possible that an appropriate section will need to be set apart in these plans.

A great deal of attention must be given to the search for effective methods of creating economic incentives that will provide, along with planning and organizational support, for accomplishment of the basic tasks of territorial development. This aspect of improving management today is the most complex and least developed. The measures adopted in recent years in this respect have made it possible to somewhat improve the situation, however it is impossible to pass an unqualified judgment on their results, since in a number of cases they have resulted in increased interest in obtaining additional funds by overusing territorial resources and not in ensuring rational use.

It is possible to single out the main tasks in developing this aspect of management: enhancing the accountability of ministries, departments, enterprises and organizations for the rational use of a territory's resources and for ensuring the territory's comprehensive development; and increasing the interest of territorial bodies in the efficient performance of the enterprises and organizations located within the given territory and improving the cooperation among them.

By way of a suggestion, the following proposals can may be recommended with regard to the first task. In order to ensure the rational use of local multipurpose resources (labor, land, water, etc.), it is necessary to expand the practice of drawing up appropriate balance sheets, which makes it possible to set regionally differentiated allocations of and payments for the use of these resources. In addition to this, in evaluating the performance results

of enterprises it would be a good idea to provide, as additional criteria on which incentives for their work would be based, for taking account of their saving of multipurpose territorial resources (land, water, etc.) and also of their improvement of the condition of the environment; and to create a system of sanctions and fines that would permit local agencies to exercise oversight to ensure the timely construction by enterprises and organizations of general economic facilities and facilities belonging to the social infrastructure. To provide for the rational formation and use of facilities belonging to the production (general economic) infrastructure, consideration should be given to the institution of taxes for the use of facilities belonging to the production infrastructure.

In order to expand interbranch and interdepartmental cooperation within a territory, it is necessary to make more frequent use of contractual relations between enterprises and organizations under different subordination in the performance of work and supplying of reciprocal services.

The augmentation of local budgets by increasing payments for the development of the local economy out of the profits of enterprises and organizations of republic and union subordination will help increase the economic interest of regional bodies of authority in improving the efficiency of the work of enterprises and organizations located on the territories under their jurisdiction.

In conditions of the acceleration of the country's socioeconomic development, it is necessary to "keep in reserve" future forms and methods of planning and management that have undergone preliminary tests; economic experimentation should play a significant role in the determination of these forms and methods.

Neither general methods guidelines for the organization and planning of economic experiments within a territory, nor particular methods guidelines dealing concretely with the questions of preparing and conducting economic experiments connected with the improvement of planning of the comprehensive economic and social development of regions have been drawn up yet.

In order for experiments in the area of planning and management within a territory to become an effective tool for working out, testing and selecting better economic-management decisions and to have a real organizational and financial base, they should become an object of planning. The group of participants in an experiment should be defined, those responsible for carrying it out should be specified, and necessary outlays should be taken into account. For example, in order to better combine the branch and territorial development of the machine-building complex and improving the organizational structure of machinery production facilities at the oblast or interoblast level, it would be possible to test in practice the establishment of a number of regional organizations:

territorial machine-building centers providing machine-building products and services to enterprises of various ministries and departments located within the territory of their respective local Soviets, with such centers under the jurisdiction of local Soviet executive committees;

collectively operated and managed enterprises (of the "joint-stock" type) organized on an interdepartmental basis with the participation of the local Soviets for the provision of machine-building services to enterprises of nonmachine-building ministries and departments;

oblast mechanization centers that would produce, on order from enterprises located within a given territory, equipment intended to reduce the share of manual labor in the technological processes in which the enterprises specialize.

It would also be possible to carry out an experiment, which is recommended by some specialists, in establishing in a number of cities and oblasts of a union republic "banks of reserve machine time" that would redistribute the free fund of such time among enterprises of various ministries and departments in order to increase the production of output of the infrastructural machinery industry.

Solution of the problems of improving the management of territorial development will contribute to implementation of the party's strategic course aimed at raising the efficiency of social production.

FOOTNOTES

1. See N. Maslennikov, "Planning of the Economic and Social Development of the RSFSR," *PLANOVoye Khozyaystvo*, No 7, 1985; and D. Vorontsov, "Questions of Improving Territorial Planning," *PLANOVoye Khozyaystvo*, No 1, 1984.
2. *PRAVDA*, 27 February 1986.
3. M. S. Gorbachev, "Politicheskiy doklad Tsentralnogo Komiteta KPSS XXVII Syezdu Kommunisticheskoy partii Sovetskogo Soyuza" [Political Report of the CPSU Central Committee to the 27th Congress of the Communist Party of the Soviet Union], Moscow, Politizdat, 1986, p 71.
4. M. S. Gorbachev, "Politicheskiy doklad Tsentralnogo Komiteta KPSS XXVII Syezdu Kommunisticheskoy partii Sovetskogo Soyuza," p 104.

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MODELING, ECONOMETRICS, COMPUTERIZATION

UNION REPUBLIC STATISTICAL ORGANS SEEK TO IMPROVE OPERATIONS

RSFSR Statistical Organs

Moscow VESTNIK STATISTIKI in Russian No 6, Jun 86 pp 3-11

[Article by P. Guzhvin, chief of RSFSR TBSU (Central Statistics Administration), under the rubric "Activating the Decisions of the 27th CPSU Congress": "Statistics at the Service of Acceleration"]

[Text] The task of accelerating our country's socioeconomic development, which was advanced by the April 1986 CPSU Central Committee Plenum and reinforced by decisions of the 27th CPSU Congress, has become the expression of our party's profound awareness of the fundamentally new situation within the country and on the world scene.

The decisions adopted by the 27th CPSU Congress define the nature and rates of movement for the individual years and decades ahead of us, the movement toward a qualitatively new state in Soviet society.

The congress participants threw considerable light upon the results, problems, and prospects of the socioeconomic development of the RSFSR and its individual territories. In the process of discussing the Political Report and the report on the Basic Directions for the Economic and Social Development of the USSR in 1986-1990 and the Period Until the Year 2000, 38 delegates representing RSFSR party organizations made statements. In those statements it was noted that during the period that elapsed after the 26th CPSU Congress, the RSFSR, like the rest of the country, has substantially moved forward and its step has become more confident during the past three years. Last year ended rather well, and industry and other branches left the starting gate well during the current year.

The workers of our republic's statistical agencies have also made a definite contribution to the attainment of these results.

On the basis of broadly extended socialist competition, the RSFSR statisticians as a whole have guaranteed the fulfillment of the plans and measures. Special attention was paid to developing the statistical-economic materials linked with the preparation and conducting of rayon, city, oblast,

and kray party conferences to hear reports and hold elections, and the materials necessary for preparing the 27th CPSU Congress.

The labor collectives and their managers, and every worker in the RSFSR state statistical agencies perceive the unconditional fulfillment of the party Central Committee's requirement that was announced from the congress rostrum -- the requirement concerning the need for the serious improvement of statistical work - as a first-priority task.

The chief political result of the congress -- the line aimed at accelerating our country's socioeconomic development -- has been perceived in the RSFSR TsSU [Central Statistics Administration -- hereinunder CSA] apparatus and in the outlying areas as a fighting program of actions for fundamentally improving the activity of the statistical agencies.

At an expanded session of the RSFSR CSA Collegium and an open party meeting for the apparatus, an exacting analysis was made, from today's positions, of the condition of the work performed by the RSFSR CSA central apparatus and the local statistical agencies, and measures were developed which are aimed at guaranteeing fulfillment of the tasks for the republic's state statistics agencies which evolve from the 27th CPSU Congress decisions. A large amount of assistance in defining these measures was rendered by the expanded USSR CSA board; a joint meeting of the party and economic aktiv of the USSR CSA and RSFSR CSA apparatus and the statistical administrations of the city of Moscow, Moscow Oblast, and their rayon links, which meeting was organized by USSR CSA; and the critical comments and recommendations directed at RSFSR CSA by the statistical administration chiefs at the expanded session of the RSFSR CSA board.

The course of the work and the content of the summary documents of the 27th CPSU Congress require a more critical approach to the activity of the statistical agencies and simultaneously force a largely new evaluation of their capabilities and role in the practical implementation of the party line aimed at accelerating the socioeconomic development of Soviet society.

Approaching the activity of the RSFSR state statistical agencies from these positions, it must be acknowledged that the RSFSR CSA collective and the local statistical agencies, during the period that has elapsed, have by no means done everything to assure the prompt and complete informing of the managerial, planning, and economic agencies concerning the economic situation that has been developing, its acuity, or the need to convert the economy to intensive methods of development.

In the RSFSR, as in the country as a whole, in the 10th and 11th Five-Year Plans there was a slowing down in the economic development rates. The CPSU Central Committee Political Report to the Party and the statements made by the congress delegates mentioned in detail the reasons for these undesirable situations.

RSFSR statisticians, despite having large informational opportunities at their disposal, failed to do everything required of them to prevent any lagging behind or to indicate where that lag was occurring by means of an efficient

and prompt system of providing information at the early stage of realization of any such lag. They did not carry out sufficiently profound research or analysis of the problems of developing national-economic base branches that determine the rates of scientific-technical progress and, in the final analysis, the effectiveness of social production as a whole. This pertained primarily to such branches as machine-building, the fuel-and-energy complex, ferrous metallurgy, and the chemical industry. The statistical-economic materials for those industrial branches were frequently informational or descriptive, without any profound penetration into the process of their development. As a consequence, the RSFSR government lacked sufficient information concerning the undesirable situations in the work being performed by the enterprises of those branches on RSFSR territory. The shortcomings in the work of RSFSR CSA are especially tangible when one considers that the RSFSR Gosplan system has very few direct ties with the planning and problems of developing the base branches. For a long time the preparation of statistical-economic reports revealed a traditional approach in viewing many processes and phenomena. In a number of instances we proceeded in economic work not from the essence of the phenomena and problems being studied, but from the organizational structure of our agencies, including the central apparatus. For example, to a large extent, we took a limited approach toward the analysis of the questions of scientific-technical progress and its influence upon developmental rates and the work effectiveness of various branches of the national economy and the economy as a whole. For the most part, use was made of reports dealing with the statistics of technical progress, the data of which fail to provide an exhaustive picture, since these reports are drawn up for individual, disassociated scientific-technical measures and stages of operations in the area of scientific-technical progress. And yet it was necessary to take a comprehensive approach to the analysis of scientific-technical progress, but unfortunately that was not done, and even now in many instances, especially in the outlying areas, at the statistical administrations these questions are considered without the necessary coordination with the indicators for other branches of statistics.

The workers in the RSFSR state statistics agencies are completely aware that they will have to apply many efforts to bring into conformity with the requirements of the time their economic work, in the center of which, obviously, they must keep the fundamental questions of economic and social development which were raised at the 27th CPSU Congress and the analysis of the rate and results of the implementation of the party's strategy, aimed at accelerating the development of Soviet society as applicable to the specifics of our republic and its individual territories. The RSFSR CSA measures stipulate concentrating attention in the selection of the subject matter and approaches toward analysis and toward its methods, and in the broader view to the entire information system, proceeding from the content of the congress materials and the party and government documents being developed to execute the congress decisions with regard to the questions of economic and social development.

The congress revealed the reasons for the undesirable situations in the economy, and measures aimed at eliminating them are being developing and are already being implemented.

A determination was made of the ways to intensify the economy in the 12th Five-Year Plan: the acceleration of scientific-technical progress as the chief lever for intensification; the provision for major changes in investment policy, capital construction, the development of the national-economic complexes, the system of administration of the economy, and in management methods; and the improvement of foreign-economic ties. Within each of these areas, specific assignments have been developed. Efficient statistical surveillance must be established over the rate of fulfillment of all these assignments.

It is planned to construct the economic work in such a way that statistical agencies will keep under their constant surveillance the most important aspects of the acceleration strategy -- the rate of fulfillment of assignments for developing industrial base branches which determine technical progress and for assimilating advanced methodological schemes and the automation and mechanization of production; the process of transformation of work stations; and the rate of the operations aimed at reducing materials-intensity and capital-intensity and the implementation of the course aimed at resource conservation.

It is planned to devote the most serious attention to analyzing the rate of fulfillment of the assignments of the Food Program, the Energy Program, the Comprehensive Program for the Development of Consumer Goods and the Services Sphere, the quality of the output being produced, and the assignments for the substantial raising of the technical level and improvement of the quality of machine-building output and for developing machine-building as the basis of scientific-technical progress in the 12th Five-Year Plan and in the long-term period until the year 2000.

There has been a sharp increase in the requirements during the current five-year plan and in the more remote period with regard to capital construction, where, as of the present time, as was mentioned at the congress, a large number of unresolved problems have accumulated. The task of the statistical agencies is not only to prepare materials for summing up the results of plan fulfillment in that branch, but also to give a fully valid evaluation of the rates and quality of the fulfillment of the economic and organizational which have been developed by the party and the government for urgently improving the situation in capital construction.

The formation of new single agencies for administering the agro-industrial complex at the center and in the outlying areas has resulted in the reorganization of the work performed by the state statistical agencies and has posed complicated tasks for organizing the structure of the composite records with the simultaneous improvement of analysis, accounting, and reporting for Gosagroprom and the agro-industrial complex.

In the period that has elapsed so far during the current year, USSR CSA and RSFSR CSA have done considerable work to implement those tasks. The procedure and volume of submitting statistical-economic information to the divisions of RSFSR Gosagroprom for all branches of statistics have been coordinated with that organization. The statistical administrations have been sent recommendations for determining the procedure and volume of the statistical

information which must be submitted to the oblast agro-industrial committees. On the whole, however, it will be necessary to carry out a substantial reorganization of the economic work that characterizes the agro-industrial complex. Special attention must be paid to the qualitative indicators of the activity.

In the congress documents, much attention was paid to the problems and tasks of further improving the territorial structure of social production and administration, which is something of special importance for ISPER. The party has posed the task of expanding and perfecting the practice of forming territorial-production complexes, of accelerating the buildup of the production potential and the assimilation of the natural resources in the eastern parts of the country, and the involvement of the natural resources of the North, Siberia, and the Far East in economic circulation, and of taking aggressive steps to carry out other territorial programs -- the development of the agrocomplexes in the Nonchernozem Zone, the Central Chernozem Zone, and the economic assimilation of the BAM [Balkal-Amur Mainline]. The organizing of these economic-territorial formations contains the idea of comprehensiveness. The RSPSR CSA Collegium has posed the task of guaranteeing a thorough analysis of their birth and development from positions of the comprehensive systems approach.

To give greater depth and effectiveness to the statistical-economic information it would seem to be extremely important to guarantee its cautionary nature, the ascertaining of undesirable deviations in the rate of fulfillment of plans and assignments, and the revealing of the mechanism of such situations at an early stage. The RSPSR CSA Collegium has planned to devote the most serious attention to this area of the economic work of the statistical agencies.

The preparation of more thorough statistical-economic information and the broader use of electronic computer technology, the capabilities of which are obviously being underused, are major reserves for raising the level of economic work.

At the present time, with the aid of USSR CSA, a system of forecasting computations with the application of electronic computers is being introduced for a number of indicators of industrial production. The first results have already been obtained. This work will be expanded and perfected. The establishment of the permanent exchange of information with the OASU [branch-level automated control system] at the ministries and departments will raise its level considerably.

The success of resolving the socioeconomic tasks advanced by the 27th CPSU Congress is inseparably linked with perfecting the administration of the national economy and with the reorganization of the economic mechanism. As is well known, in the last years of the 11th Five-Year Plan the country carried out a number of economic experiments, some of which are continuing to the present time.

The new management methods that have been tested experimentally have been in use, starting in 1986, at almost half the industrial enterprises and

associations. Starting in 1987, all the industrial ministries will change over to those conditions. Their introduction has begun in the personal services sphere, in construction, and in transport.

There has been a change in the structure of administration of the machine-building, fuel-and-energy, and agro-industrial complexes.

Under conditions of the intensive reorganization of administration and the economic mechanism, there inevitably arises the need to change the content in the forms of statistical reports, the structure and indicators in the composite data, and the cross-sectional view of development. In this regard the workers at the RSFSR statistical agencies will have to demonstrate the maximum amount of initiative, creativity, and understanding of the need for a complete analysis of the operation of enterprises and organizations operating under the new management methods.

In the Basic Directions, tasks that have been posed as one of the conditions for perfecting the administration of the national economy are the tasks of increasing the role of accounting, statistics, and control in guaranteeing efficient and economic use of resources, in intensifying the struggle against mismanagement and waste and for the intactness of socialist property; of improving control and inspection work; of carrying out measures to improve the departmental control system and to increase its effectiveness; and to reduce and simplify reports.

Fulfilling these tasks is impossible without instituting the proper order in accounting at enterprises and organizations of the national economy. Obviously, mismanagement, waste, and other very crude violation of the fundamental principles of conducting the socialist economy frequently become possible as a consequence of the neglected state of accounting, and the irresponsible attitude taken to accounting by the appropriate officials at the enterprises and organizations. Everyone knows of numerous instances of the poor state of accounting and its unreliability when it is a matter of the existence and expenditure of fuel-and-energy and other material resources in industry, construction, transportation, the branches of the agro-industry, and in housing and municipal management. On the whole, enterprises and organizations have been maintaining poor records about such situations as the intrashift losses of work time and of absenteeism. There are many such examples.

The decisions of the 27th CPSU Congress have made completely clear that this situation is especially intolerable at the present time, when the success of carrying out the strategy developed by the party for accelerating our country's socioeconomic development depends tremendously upon how economically and efficiently the material and other resources will be used, because in the current five-year plan alone, in order to assure the successful fulfillment of the plans, it will be necessary to guarantee a reduction in the materials-intensity of the social product by 4-5 percent, to reduce the energy-intensity of the national economy by 7-9 percent; and metal-intensity by 13-15 percent.

There exist two basic reasons for this situation with regard to accounting in the national economy: the managers' underestimation of the role of accounting,

and the passive, at times formal, position taken by the workers at the statistical agencies. RSFSR CPA plans to increase considerably the attention paid to questions of the state of accounting and reporting and to increase the business contacts pertaining to these questions with workers at the ministries, departments, enterprises, and organizations, proceeding from the assumption that without the sharp improvement of the work in this sector the statistical agencies will not be able to guarantee at the proper level the fulfillment of the tasks evolving from the congress decisions.

The problem of guaranteeing the reliability of the report data is currently more acute than it has ever been. This largely determines the carrying out of a number of fundamental tasks that were posed at the congress, primarily such tasks as the scientific substantiation of the administrative decisions being made, which requires the availability of objective information; and the unconditional observance of the principles of social justice, including the most important principle "From each according to his capabilities, to each according to his labor." The guaranteeing of the reliability of the report data, the struggle against figure-padding in state reports, constitutes an inseparable part of the party's struggle against the undesirable situations that have accumulated in previous years and the struggle to bring socialist society to qualitatively new heights.

Substantial shortcomings in this work in 1985 also occurred at the statistical administrations of Orenburg Oblast and Karelian, Yakut, and North Ossetian autonomous republics. A well-principled position was not always taken to eliminating the shortcomings that had been revealed or to punishing the persons who were guilty of figure-padding or otherwise altering the report data at the statistical administrations of Vologda, Kalinin, Amur, and Kaliningrad oblasts, the Buryat and Tuva autonomous republics, and others. Unfortunately, the number of instances of figure-padding has not been decreasing. However, in by no means all instances do the statistical agencies bring the matter to its conclusion, strive to punish the guilty individuals, or make complete application here of the force of law, or of publicity. The fight against figure-padding in state reports on plan fulfillment, despite the most categorical warnings issued by the directive agencies, frequently is still hampered by narrow departmental interests, the striving by any means to present the picture in a better light than actually pertains.

The workers in RSFSR state statistics are confronted with the task of decisively conducting a strictly party line in matters of information objectivity.

The serious shortcomings in the work performed by the statistical agencies in improving the state of accounting and reporting in the republic's national economy and in guaranteeing the reliability of the report data are largely influenced by the work style and methods that have developed. Many essentially correct decisions concerning the improvement of accounting and reporting and the intensification of coordination of joint efforts with other competent organs, ministries and departments have not been backed up by the required organizing and everyday practical work and as a result they were not completely fulfilled and failed to yield the necessary benefit.

The paper work style is still alive and it is no simple matter to change it. That style is still strong, both in the center and in the outlying areas. USSR CSA inspections indicate that it would be largely possible to resolve the problem of the report discipline at enterprises and organizations if the writing of a large number of papers was replaced by efficient daily contacts with the enterprise management and with the party and trade-union organizations.

It is necessary to make the work in this sector more effective and truly unimprovising and to use completely, aggressively, and skillfully the rights granted to the statistical agencies, including the right to ask the managers of ministries, departments, enterprises, and organizations to give oral reports on questions of accounting and reporting.

The firm party course that was taken after the April 1965 CPSU Central Committee Plenum and that was reinforced by decisions of the 27th CPSU Congress -- the course aimed at eradicating from Soviet society unobjective information, ostentation, and sensationalism -- creates exceptionally favorable opportunities for giving a qualitatively new condition to all our work of checking the reliability of report data. Our duty is to increase sharply the effectiveness of the work being carried out, to make the maximum use of all the available opportunities for creating an atmosphere of intolerance of figure-padding, and, by our practical deeds, to make our contribution to the successful implementation of this party course. It is especially necessary to isolate the questions of reducing and simplifying the reports.

USSR CSA poses the task of the sharp (as much as 50 percent) reduction in the nationwide statistical reports, which, of course, is differentiated by branches. In conformity with CPSU Central Committee and USSR Council of Ministers decree "The Further Perfection of the Economic Mechanism of Management in the Country's Agro-industrial Complex," (USSR Agrarian and USSR CSA must, as early as 1967, reduce substantially (by 30-40 percent) the number of indicators in planning documentation, annual reports, and the timely reports submitted by kolkhozes, sovkhozes, and other enterprises in the agro-industrial complex. There must be a similar reduction (as much as 50 percent) in the reports that have been approved by the CSA of the union republics for the republic ministries and departments, and the indicators to be collected along the line of the branch automated control systems.

The problem of "illegal" reports continues to be acute. During recent years, state statistical agencies have revealed and replaced several thousand illegal reporting forms that had been introduced by ministries and departments and by scientific institutions. Nevertheless the ministries and departments keep introducing newer and newer reports. Consequently, the steps being taken by the statistical agencies are not effective.

What is needed here is psychological reorganization. It is necessary to learn how to see clearly the volumes of the reports that are actually needed to monitor the final results, but, obviously, it is no easy matter to do this. Yet this is the only thing that can be the objective foundation for building information.

For the successful resolution of the tasks evolving from the 27th CPSU Congress decisions for the statistical agencies, it is necessary to put into active all the reserves and available opportunities. One of the largest reserves of this type is the more effective use of the modern computer technology that the USSR GSA computer system has at its disposal.

The third phase of the ASOS (automated system for state statistics), which was adopted for industrial operation late last year, made it possible to raise the level of automation of statistical projects to 57 percent, as compared with 41 percent in 1980.

However, the state of mechanization and automation of statistical projects cannot satisfy us. More than one-fourth (28.3 percent) of the indicators in statistical reports continue to be processed with the application of relatively unproductive and cumbersome keyboard-type calculators, largely as a result of the depletion of the pool of computer technology.

At the same time there have been rather frequent instances when modern technology has been little used for resolving statistical tasks. As has been shown by inspections, many of the VIs [computer centers] at the statistical administrations still do not receive the primary reports from the enterprises and organizations, but, rather, composite reports from oblast administrations and associations. We can no longer tolerate such violations of the principles of statistics centralization. The statistical administrations of the autonomous republics, krais, and oblasts have been assigned the task of establishing the proper order in this matter and of creating the necessary prerequisites for the effective use of the opportunities at the EOI [electronic information-processing] complexes, and for improving the preparation of the statistical materials needed by the local administrative agencies at all levels.

The problem of reinforcing the links of statistical agencies at the rayon level continues to be an extremely acute one.

The USSR GSA Commission has already considered twice during the current year the question of reinforcing the link between rayons. The appropriate instructions were issued concerning the preparation of specific recommendations for improving the organizational structure of the state statistical agencies at the oblast and rayon level, for the fundamental re-equipping of the technical base at the rayon link on the basis of modern mini- and microcomputers, and for perfecting the economic mechanism of administering the computer system.

The complexity of the tasks confronting the state statistical agencies dictates completely obviously the need to increase the initiative and responsibility of the cadres. All the recommendations of the 27th CPSU Congress must be channeled into the making of practical decisions and the carrying out of real actions. This requires a large amount of organizational spirit, competency, and business efficiency. However, in the work of selecting, assigning, and educating cadres we still have serious shortcomings.

When people are being promoted to managerial positions, in by no means all instances is consideration taken of the opinion of the social organizations or the labor collectives. Unobjective performance appraisals prevail. All this attests to the fact that we must intensify our educational work with regard to creating in every labor collective an atmosphere of high mutual exactingness, responsibility, publicity, and the intensification of the role of the social organizations and the labor collective in resolving the questions of production activity and social development.

Many efforts will have to be applied by the management and boards of the central apparatus and the local statistical agencies in order to guarantee the required level of preparation of a reserve of cadres for promotion, the improvement of the qualitative makeup of the cadres with regard to their educational level, especially in the oblast and rayon links of state statistics, and to achieve a fundamental improvement in the work with young specialists.

In the light of the decisions of the 27th CPSU Congress, special importance is attached to the question of raising the competency level of the cadres, the constant maintenance of the specialists' knowledge, and the ability to use them in the practical situation at the level that is required by life. In this regard it is necessary to intensify considerably the attention devoted to the content and effectiveness of the work to raise the proficiency level of the cadres. In the system as a whole, the requirements of providing mandatory instruction to managerial workers and specialists in the national economy at least once every six years are being fulfilled. In many statistical administrations a responsible attitude is taken to this important matter. At the same time, in a number of statistical administrations the plan for refresher training of the workers is not being fulfilled. Providing refresher training once every six years does not resolve the problem of raising the level of the cadres' knowledge and competency, especially under the modern conditions of the dynamic buildup of new phenomena and processes in the economy and the intense search for optimal versions of administrative structures and the economic mechanism. The entire job of raising the proficiency level of the cadres must be channeled into the thorough study and assimilation of the party's economic and social strategy, the skillful application of the principles and aims of that strategy in practical work. All types of instruction must be subordinated to this goal.

In addition to perfecting the traditional methods of instructing the cadres, it is necessary for us both in the central apparatus and in the outlying areas to take practical steps to organize the teaching of the economic specialists in how to work with computer technology, and for us to create automated work stations for economists.

The work of combatting personnel turnover must be more purposeful.

Thanks to the steps that have been taken, it was possible to reduce the turnover rate in RSFSR state statistics agencies during the 11th Five-Year Plan from 14.4 to 9.9 percent. At the same time, in certain statistical administrations, particularly in Stavropol Kray and Kemerovo and Kostroma oblasts, personnel turnover has not only not been decreasing, but has even

been growing. The personnel turnover rate is high in the statistical administrations of Tuva ASSR, Altay Kray, and Orenburg Oblast. In the computer system at the rayon level in the state statistics agencies of Saratov, Orenburg, Perm, and a number of other oblasts, the personnel turnover rate exceeds 20 percent. The managers, boards, and social organizations at that statistical administrations have been assigned the task of carefully analyzing the reasons for the high turnover rate and of carrying out measures to reduce it.

Personnel turnover to a definite degree is linked with the unsatisfactory state of affairs with the construction and activation of computer centers and stations. USSR CSA Chief M. A. Korolev, at an expanded session of the USSR CSA Collegium, justifiably criticized RSFSR CSA for having allowed a lag in the construction of projects. And actually the plans for the capital construction of RSFSR CSA projects during the five-year plan were not fulfilled each year. Not a single project was activated by the deadline in conformity with the standards for the duration of construction. And we feel that one of the basic reasons for this was the insufficient aggressiveness on the part of the management at the appropriate statistical administrations, and the lack of any effective control by RSFSR CSA.

A number of statistical administrations and oblast machine information centers have not been fulfilling the plans for increasing the number of accommodations at dining rooms and snack bars. During the 11th Five-Year Plan those assignments were not fulfilled by the statistical administrations of Volgograd, Irkutsk, Ryazan, and Chita oblast, and the Tula Oblast machine information center. These situations attest to the fact that we must devote considerably more attention to the entire group of questions linked with the improvement of the working, everyday living, and recreational conditions for the workers, and in the broader plan the social aspect of the life of the production collectives at the center and in the outlying areas.

Throughout the country, the organizational and practical work that is aimed at fulfilling the goals of the 27th CPSU Congress is being extended on an increasingly broad and dynamic scale. All the workers in the state statistics agencies have perceived the party plans as a matter involving their own self-interests. The most important factor now is to convert the energy of ideas into the energy of concrete actions in every labor collective.

Entirely approving the political course and practical activity of the party's Central Committee and the principles, conclusions, and tasks enunciated in the 27th CPSU Congress documents, the workers in the RSFSR state statistics agencies will devote all their efforts, knowledge, abilities, and labor zeal to assuring the unconditional fulfillment of the tasks assigned by the party and government.

Republic CSA Reports

Moscow VESTNIK STATISTIKI in Russian No 6, Jun 86 pp 37-41

[Unattributed article "At the USSR CSA Collegium"; for a related article, see JPRS-UEA-86-027 of 13 August 1986: "CSA Officials Set Goals, Cite Operational Shortfalls"]

[Text] An expanded session of the USSR CSA Collegium has considered the tasks evolving for the state statistics agencies from the decisions of the 27th CPSU Congress.

A report on that question was given by USSR CSA Chief M. Korolev (content of the report was given in editorial of VESTNIK STATISTIKI, No 4).

RSFSR CSA Chief P. Guzhvin remarked that in the RSFSR, as in the country as a whole, the economic growth rates had slowed down during the 10th and 11th five-year plans. Many autonomous republics, krais, and oblasts failed to fulfill the basic indicators of the five-year plan.

The republic's statistical agencies have by no means done everything to prevent the lagging behind. The chief area where insufficient work has been carried out is the analysis of the problems of developing the national-economic base branches (machine-building, fuel-and-energy complex, ferrous metallurgy, chemical industry). The materials for these branches, as a rule, have been of an informational nature, without any profound analysis of their development or of the disproportions and problems that arise. As a result, no information has been submitted concerning the buildup of undesirable situations in the work of the enterprises in those branches or the lag in raising their technical level.

A major reserve for raising the level of economic work is the preparation of more thorough statistical-economic information and the broad use of electronic-computer technology.

At the present time RSFSR CSA, with the aid of USSR CSA, has been introducing a computer-based system of forecasting computations for a number of indicators of industrial production. The first results have already been received. That work will be expanded and perfected. Considerable opportunities for raising the level of statistical-economic information lies in the establishment of the constant exchange of information with the ministry and departmental OASU.

On instructions from the USSR CSA board, RSFSR CSA was recently given recommendations concerning the reduction of reports. According to the currently effective methodology for computation, the extent of the reduction in our recommendations for nationwide reports constitutes 25 percent. Of course this is insufficient. In the speaker's opinion, it is necessary to continue to work in the direct of the decisive reduction in the content and number of indicators, forms, etc. In the course of this work one senses a large resistance on the part of the planning and economic agencies. Moreover, requests, and sometimes even requirements, concerning the introduction of additional reports have been coming in.

In the questions linked with the volume of reports, a psychological reorganization is needed. It is necessary to learn how to see clearly the volumes of reports that are actually necessary for supervising the final results; it is no easy matter to do this, but this is precisely what must be the objective foundation for constructing the information. The fight against excessive reports must become more aggressive.

Georgian SSR CSA Chief R. Basariya emphasized that the time has come for principled, qualitative changes in organizing state statistics in the spirit of the 27th CPSU Congress decisions, and the other party and governmental decrees dealing with questions of perfecting administration and the economic mechanism.

During recent years the problems of administering the national economy have become considerably more complicated. This is linked primarily with the expansion of the intrabranh and interbranch ties. With the complication of the problems of administration, there has been a consistent improvement throughout the country in the administration of the national economy. The changes in economic administration have had practically no effect upon the state statistics agencies. When resolving such a major question as the creation of Gosagroprom and the rayon agro-industrial associations, the questions of providing the information support to this qualitatively new system of administration were not stipulated. The structure and administrative status of the CSA correspond at the present time basically to the system of the centralized, branch, and ministerial administration of the national economy, but these by no means completely satisfy the requirements of the territorial administration of the economy. In the statutes governing the CSA of the union republics even without division into oblasts there is no mention of the fact that the CSA engage in the organizing of information in the rayon (city) cross-sectional view.

At the present time the CSA issue in the territorial cross-sectional view a considerable volume of information, but in order to cope with the task of the informational support of the administration of the national economy at the level of today's demands it is necessary to reinforce considerably the city and rayon statistical agencies.

In the speaker's opinion, it is necessary to make the maximum concentration of the statistical information, especially that which is linked with plan fulfillment, in the state statistics agencies. It is also necessary to guarantee that the information submitted by the state statistics agencies is the most time-responsive.

It would seem to be necessary to resolve a fundamental question in the methodology of planning, accounting, and reporting: the reduction of the plan periodicity and the guaranteeing of the greater frequency of the report, as compared with the plan periodicity, that is, if, for a particular indicator, monthly plans are established, the statistical information must be, as a minimum, half-monthly, and if the plan is quarterly, the information must be monthly (or for 1.5 months), etc.

The systematization of information and the reduction of plan periodicity; the improvement of the informational support of administration through state statistics; and the conversion of the narrowly branch, and to a large extent purely technological, information to the category of departmental information will promote the reduction of the information flows, the guaranteeing of the true independence of the enterprises, and the confirmation of the style of effective administration of the national economy.

The speaker proposed removing the planning indicators from statistical reports. In this regard it is necessary to arrange for the previous submittal to statistical agencies of all the planning indicators for the year (quarter), with numerical breakdown by planning periods, by analogy with Form No. 1-p (preliminary) for statistical reports for industry. In addition to the considerable reduction of the statistical information, this procedure will promote the reinforcement of planning discipline and will prevent illegal adjustments of the plans.

When introducing the new reports or developing the program for the electronic processing of information, it is necessary rigorously to take into consideration the fact that there are centralized reports and uncentralized ones.

Belorussian SSR CSA Chief V. Nichiporovich remarked that the BSSR CSA has developed measures for further perfecting and raising the level of the work performed by the state statistics agencies in the light of the tasks evolving from the decisions of the 30th BCP Congress. At the present time, additional measures are being developed, with a consideration of the decisions of the 27th CPSU Congress.

A special place in those measures has been given to questions of reinforcing report discipline, to stopping instances of figure-padding and fraud, and to reflecting in the statistical materials the true situation in the economy.

The work of verifying the reliability of the report data and the state of accounting and reporting, which work is being carried out by the BSSR statistical agencies, is not yet sufficiently effective. Instances of figure-padding and other distortions in the reports are still widespread. The republic's statistical agencies do not always give the proper evaluation to instances of taking a liberal attitude to the persons guilty of figure-padding, and have not demonstrated thorough adherence to principles in this matter, as a result of which the guilty individuals basically have only disciplinary measures applied to them.

The steps being taken to locate and eliminate illegal reports have been relatively ineffective. The shameful practice of collecting those reports still exists, especially on the oblast and rayon levels. A large volume of reports is collected along the lines of the ministry and departmental OASU.

In the republic the work of introducing unified primary-accounting forms into practice has not been completed. According to report data, as of 1 January 1986, 96 percent of the enterprises and organizations have completed their introduction.

The BSSR CSA Collegium has taken a number of steps to intensify the monitoring of the reliability of report data, to reinforce state discipline, to reduce the size of the statistical forms and to simplify them, and to eliminate reports that have not been approved in the established procedure.

The BSSR CSA administrations and departments have been carrying out aggressive work to study the effectiveness of the use of the state statistical reports approved by BSSR CSA (125 such forms, of which 50 percent are report forms approved by BSSR CSA on instructions from USSR CSA), as well as the reports collected at the OASU. At the present time, provision is made for 55 statistical report forms that have been approved by ministries and departments after coordination with BSSR CSA for OASU. The ministries and departments have been sent letters with a recommendation for a 50-percent reduction in such reports.

In the statement by Uzbek SSR CSA Chief M. Sadykov it was stated that special attention in the work of UzSSR CSA has been devoted to questions of guaranteeing the reliability of the report data and to the fight against fraud and figure-padding in reporting. Subject-matter inspections of the report data reliability have been carried out, as well as territorial-complex inspections by branches of the national economy in a number of cities and rayons of Karakalpak ASSR, oblasts, and the city of Tashkent. A number of measures for the further development of the mechanization of statistical and computational-accounting operations have been carried out.

In addition to what has been achieved, there are serious shortcomings in the work of the UzSSR CSA. This pertains primarily to the work with cadres. There are no reserves, the refresher training plan has not been fulfilled, and there is considerable personnel turnover in a number of the oblast statistical administrations.

The work forms and methods require a different approach. It is necessary to perfect the analytical work, especially with regard to a comprehensive analysis of the interbranch and intrabranh ties and proportions in the national economy.

One still encounters errors in the statistical reports and delays in submitting them. There has been practically no reduction in the number of instances of figure-padding, concealment, and distortions in reporting. Inspections have revealed instances when the state statistics workers at the rayon level, under the pressure of the local managerial agencies, have distorted the daily resume reporting on the rate of procurements of raw cotton and have concealed facts. This has been established in Dzhizak, Namangan, Fergana, and Navoi oblasts. In Namangan and Bukhara oblasts, the illegally activated capacities have not been removed from plan fulfillment for a prolonged period of time. Those guilty have been punished.

The work of guiding the local statistical agencies requires improvement. An insufficient number of independent inspections of the territorial complex have are being conducted by the statistical administrations of individual oblasts.

There are also shortcomings in the work of the UzSSR CSA computer system. A number of computer centers and stations failed to fulfill the plan for overall volume of operations as expressed in terms of value. The level of the work load placed on individual types of computer technology is low. Certain computer organizations have been operating at a loss.

Tadzhik SSR CSA chief I. Karimov said that during the past year the efforts of the republic's statistical agencies were aimed at improving the quality and deadlines for submittal of composite reports, at guaranteeing the reliability of the report data, at improving the economic work, and at issuing statistical collections and bulletins.

However, it must be admitted that complete use is not yet being made of the available reserves and opportunities for achieving a further rise in the work level.

At many enterprises and organizations report discipline is still low, instances of figure-padding and distortions in the reporting have not been eliminated, the analysis of the statistical materials is not always thorough, and the work of managing the local statistical agencies is not organized at the proper level. The rate of results of the inspections being carried out to check the condition of the accounting and reporting is insufficient, not all the computer centers have been working profitably, and the effectiveness of the use of computer technology is low.

Moscow Statistical Administration Chief L. Korneyeva directed her attention to the difficulties of collecting report data for industry. The results are processed manually at the statistical administration. The electronic complexes are not suitable for machine processing.

Then she dwelt on questions of eliminating parallelism in submitting urgent and postal reports, and the possible deconcentration of the deadlines for the conducting of random studies, the bulk of which are dated 1 January, and also dwelt on certain methodological questions.

Ukrainian SSR CSA Deputy Chief A. Zhuk remarked that the republic's statistical agencies have basically fulfilled those tasks that were stipulated by the measures for fulfilling the decisions of the 26th CPSU Congress, the 27th UKCP Congress, and subsequent party and governmental decisions.

UKSSR CSA and its local agencies devoted serious attention to fulfilling the instructions of the directive agencies with regard to the eradication of instances of figure-padding and fraud. There has been an increase in the effectiveness of the inspections, and closer contact has been established with the ministries, departments, and their middle link in the further improvement of accounting and reporting in their systems.

In addition to what has been achieved, the speaker mentioned individual manifestations of inertia, and pointed out the need for the further improvement of the forms and methods of organizer work. Certain analytical memoranda that are prepared by administrations and departments, do not conform in character to the increased demands of today. The level of the work being

carried out to improve accounting and to guarantee the reliability of the report data does not correspond fully to the demands made. In a number of ministries and departments in the republic, the work of introducing unified forms of primary accounting documentation into accounting practice is not completed.

In the computer system there has not yet been any resolution of the questions linked with improving the quality of the mechanized statistical projects and computer-information services for the republic's national economy, to which the basic efforts of the workers at the computer centers and stations will be aimed in the 12th Five-Year Plan.

In her statement Moscow Oblast Statistical Administration Chief Ye. Sukhova dwelt on the difficulties arising in the work of administration as a result of the reduction of the periods of time for submitting a report on the results of fulfilling the plan for economic and social development. The collection of data on capital construction by the deadline is rendered especially difficult, since the oblast has a large number of contract organizations.

In her opinion, the reduction of the reporting forms to be submitted by the contract organizations can serve as a reserve for collecting data on capital investment. Some of the forms could be abolished, and individual indicators could be included in the remaining forms.

Then the speaker remarked that within the near future it will be necessary to resolve the question of interaction with the branch automated control systems at all levels.

Latvian SSR CSA Chief G. Baltin touched upon a number of methodological questions, and particularly the question of the accounting of persons holding more than one job, and of persons working at home.

Form No. 12-nt (annual) was subjected to criticism. Frequently the newly introduced indicators in the form are not provided with the appropriate instructional materials, and there are contradictions between the first and subsequent sections of the form. It happens that various documents give various interpretations of one and the same question.

Sometimes the reduction of the reporting creates large complications in the work. For example, when Form No. 2-Ks was reduced, the new version omitted the indicator of the plan from the beginning of the year for construction of structures intended for social-cultural and production purposes. That led to difficulties in monitoring that indicator.

The instructions for most of the one-time accounts and studies sometimes arrive very late.

In conclusion the speaker recommended conducting, once a year, conferences of the republic CSA chiefs to discuss the methodological problems confronting statistics.

All those who spoke heartily approved the decisions of the party's 27th Congress and unanimously expressed their firm resolve to apply all their efforts to implement those decisions. The chief political result of the congress -- the party line aimed at accelerating the country's socioeconomic development -- was perceived by them as a fighting program of actions for improving the activity of the statistical agencies.

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CSO: 1820/220

AGRO-ECONOMICS, POLICY, ORGANIZATION

UDC 631.151.2

ECONOMIST EXAMINES APK INTENSIFICATION PLANNING PROCESS

Moscow EKONOMIKA SELSKOGO KHOZYAYSTVA in Russian No 8, Aug 86 pp 35-41

[Article by V. Uzun, doctor of economic sciences, department director (All-Union Scientific Research Institute of Economics of Agriculture): "Planning of the Process of Intensification of Agricultural Production"]

[Text] The new approach to the planning of the activity of kolkhozes, sovkhozes, and other APK enterprises stimulating the further growth of production intensity was reflected in the decree of the CPSU Central Committee and the USSR Council of Ministers "On the Further Improvement in the Economic Mechanism of Management in the Country's Agro-Industrial Complex." The introduction of standard planning envisaged by the decree presupposes the allocation of resources primarily to the enterprises and regions that ensure their standard return. At the same time, the acquisition of additional resources involves a simultaneous increase in plans for state purchases (according to given standards per resource unit). In this manner a balance of the plan for production, purchases, and material and technical supply is attained and the possibility of choosing the most intensive variants of utilization of available and newly allocated resources is ensured.

The process of intensification of socialist agriculture expressed in a systematic increase in the intensity and efficiency of utilization of land, animals, and material-technical and labor resources occurs under the effect of a great number of factors. Only their optimal combination makes it possible to attain the maximum return per unit of additional investments. The planned nature of intensification lies precisely in a conscious selection of the most efficient variants of development and in the application of all factors in optimal proportions.

The planning of the intensification process begins from the choice of a production structure meeting the natural and economic conditions of a region and a farm to the greatest extent. A correct determination of types of activities and their correlation will make it possible to utilize the bioclimatic potential, as well as the accumulated production potential, with the greatest intensity.

At the second stage it is necessary to determine the volumes and correlations of production resources. At the same time, it is advisable to use the methodological techniques set forth below.

Provision of resources at a standard level. Investigations at Union and regional scientific research institutes, higher educational institutions, and experimental and machine testing stations have developed standards of the need for tractors, combines, other agricultural machines, equipment, electric power, fuel, fertilizers, plant protection agents, herbicides, feed, mixed feed, microbiological additives, labor, and so forth. In cases when the application of a resource (for example, fertilizers) in different doses is allowed, the optimal dose ensuring the highest return per resource unit is indicated. On the basis of a comparison of the standard and actual provision of resources per employed person, per hectare, and per head of livestock the need for additional resources necessary for the attainment of the level of intensity recommended by scientific research organizations is determined.

An extensive application of this method for the development of intensification plans is held back by its shortcomings. First, standards of the need for resources have been developed for large regions, Union republics, and the country as a whole. Their application within the limits of an administrative region or a farm without due regard for their specific characteristics can lead to unsubstantiated decisions. Second, standards have been developed on the basis of technological requirements and in the overwhelming majority of cases economic indicators have not been taken into consideration during their preparation. The effect from drawing in additional resources and the expenditures on their acquisition have not been compared. This has led to the development of standards far from economically permissible limits of their application. Third, the optimal volume of application of a resource depends on its prices and on the obtained effect. It can be determined in the form of a certain production function. Existing standards do not depend on prices of resources. As a result, even after a sharp rise in the prices of fertilizers, building materials, and a number of other articles, which has significantly limited the area of their efficient application, the recommended norms have remained without changes. However, the expenditure of these resources has not only failed to decrease, but has continued to grow. Fourth, standards have been developed and recommended for individual types of resources and materials. However, the efficiency of utilization of an individual resource depends on the provision of other resources. This dependence has not been taken into consideration during the development of standards.

Optimal correlation of resources. It is not always possible to actually ensure the standard need for resources. Despite this, however, it is necessary to maintain an optimal correlation among resources (various types of fertilizers, power and working machines, the delivery of machines and spare parts for them, machines and the repair base, fertilizers and machines for their application, mixed feed and protein-vitamin additives, and land and labor resources and stocks). It should be kept in mind that disproportions always show not only the shortage of some types of resources, but also the surplus of others. For example, noncorrespondence between power and working machines points not only to the shortage of the latter, but also to the surplus of power machines at this level of provision of working machines. The

optimal proportionality among various types of resources is possible not only at a standard level, but also at levels below the standard one. Therefore, there is no need to provide some resources at a standard level if other resources are much lower than this level.

Supply of resources in full sets with due regard for their technical level and quality. Resources utilized at different stages of the technological cycle of production of final products should be qualitatively uniform. Otherwise, a decrease in production efficiency is inevitable. High-quality, new resources should be supplied in sets for the entire technological chain. From this it follows that high-quality resources should be concentrated on some farms, whereas relatively inferior resources should be gathered together on other farms (regions).

A qualitative combination of resources under conditions of planned intensification places certain requirements. First of all, this concerns the planning of sets of machines for intensive technologies of production of agricultural products. Tractors not provided with a set of machines for overall mechanization are often produced and delivered to agriculture. It is necessary to change over to the planning of the development of intensive technologies of production of plant and livestock products and the output of and provision of agricultural production with sets of machines for this technology. As the experience in the introduction of intensive technologies of production of wheat, corn, sunflower seeds, onions, and a number of other crops shows, the yield increases 1.5- to 2-fold, while labor expenditures per unit of output are lowered several-fold.

It is necessary to plan sets of machines for industrial technologies of production, transportation, and processing of agricultural products. Technologies for the production of final APK products and the systems of machinery and equipment necessary for them should be developed through the joint efforts of ministries of tractor and agricultural machine building, machine building for light and food industry, and Gosagroprom.

The industrial technology for the production of tomatoes and the output of tomato paste introduced in the Moldavian SSR can serve as an example. It is provided with technical facilities for the preparation of soil for tomatoes, application of fertilizers and herbicides, sowing and planting of tomatoes, their care, combine harvesting, transportation of tomatoes to a sorting center, technological lines for washing and sorting, automatic lines for the preparation of tomato paste, capacities for storing it, and so forth.

The entire system of machinery and equipment ensures a unity of technology and is coordinated in terms of specifications and productivity. Similar technologies are also necessary in the development of many other types of final APK products.

Standard intensive technologies of production of products are developed in terms of a certain area or stock (for example, 800 hectares of corn, 600 hectares of tomatoes, and 50, 100, 200, 400, 800, and 1,200 head of dairy cattle and more). Therefore, an area or stock should be expanded according to the increase in the number of sets of machinery and equipment for these

purposes. Since developed technologies are used for quite a long time and some machines in a set can be upgraded more rapidly, the replacement of some old machines with new ones is possible only if they join the general system.

Nonobservance of this condition at present often leads to an inefficient utilization of new equipment. For example, many virgin-land sovkhozes receive new motor vehicles of a big load capacity manufactured by the Kama Motor Vehicle Plant. However, these machines do not join the existing technological process of grain production. The scales and motor vehicle lifts available on farms are not designed for vehicles with such a lifting capacity. It is impossible to weigh, or to unload motor vehicles manufactured by the Kama Motor Vehicle Plant with the utilization of the previous system of machinery and equipment, which leads to a sharp increase in labor expenditures on threshing floors.

Under conditions of industrial production it is advisable to abandon standards for individual types of resources, but to observe their correlation. This requirement is especially important during the introduction of intensive technologies of production (in many cases, production and processing) of agricultural products. Here a set of machinery, equipment, and materials should be considered a single overall standard, whose violation is inadmissible categorically. When there is a shortage of individual types of means of production, it is necessary to change the area of cultivation of a given crop according to intensive technology, not the provision of resources per unit of area.

Planned intensification should be accompanied by an improvement in the utilization of labor resources and labor productivity growth. In this connection it is necessary to carefully analyze the consequences of introduction of intensive technologies of cultivation of agricultural crops, especially if capital investments in the mechanization of operations release manpower during individual periods. For example, the industrial technology of corn production makes it possible to reduce the frequency of soil cultivation. After the application of herbicides and the sowing of corn machine operators return to a given field for harvesting. Summer field work on the care of crops is ruled out completely. Naturally, this leads to a decrease in the intensity of utilization of manpower for this crop. During free periods it becomes necessary to transfer workers either to other crops, or to employ them in nonagricultural types of activities. The latter is especially important. F. Engels wrote that under communism "the same people will engage in farming and industrial labor..." (K. Marx and F. Engels, "Soch." [Works], second edition, Vol 4, p 336). The need for the combination of agricultural and industrial labor is dictated by the law of change of labor, on the one hand, and by the seasonal nature of production, on the other.

The combination of industrial and agricultural production can be attained through the development of subsidiary small industries on kolkhoses and sovkhozes, construction of industrial enterprises by them, and placement of plants and factories, or their affiliates, in rural areas.

Extensive experience in intensification on the basis of the combination of industrial and agricultural production has been accumulated in our country.

For example, on the Adashi Kolkhoz in the Latvian SSR in 1984 of the total value of gross output of 45.2 million rubles plant growing and animal husbandry accounted for 31.9 million rubles and nonagricultural sectors, for 23.3 million rubles, that is, 51.6 percent. Furthermore, work on capital construction and repairs by the economic method worth 5.6 million rubles was performed. In the production of agricultural products 2.9 million man-hours were completed and in industry and other sectors, 3.1 million man-hours. Such a production structure enabled the kolkhoz, on the one hand, to ensure all-year-round employment and, on the other, to manage without the enlistment of seasonal workers. The development of nonagricultural sectors does not harper, but conversely, helps the farm to develop basic production. More than 40 quintals of grain crops per hectare and about 5,000 kg of milk per cow are obtained here, a virus-free meristematic technology of potato cultivation is introduced, and so forth.

However, in the country there is a large number of kolkhozes and sovkhoses, in which the number of work places, especially during intense periods, greatly exceeds the availability of labor resources. Intensification of the utilization of resources on these farms requires the enlistment of seasonal manpower. At present it is carried out without a clear plan, introduces a considerable disorganization into the development of other sectors, and is extremely costly. In many cases the labor of enlisted workers is extremely inefficient. The planned intensification of utilization of the labor of seasonal workers requires the implementation of a number of measures.

It is necessary to draw up five-year and annual plans for the enlistment of seasonal workers in agricultural production and to conclude (on the basis of drawn up plans) contracts among agricultural, industrial, and other enterprises. The training of workers in a second occupation enlisted from other national economic sectors for work in agriculture should be organized. Plans for industrial and other enterprises should be drawn up with due regard for the withdrawal of some workers for seasonal agricultural work.

When estimating the efficiency of construction of new enterprises, especially in rural areas, settlements, and small cities, it is necessary to take into account the reduction in their average annual capacity in connection with the withdrawal of workers for seasonal agricultural work. It is advisable to organize a system of accounting of the full expenditures connected with the enlistment of seasonal workers in agriculture, including payments at the place of basic work, transport expenditures, equipment downtime, depreciation at industrial and other enterprises, and maintenance of dormitories, restaurants, and so forth at agricultural enterprises. All the above-indicated expenditures should be put down to the production costs of agricultural products.

The development of citizens' private subsidiary farms is an important factor in the intensification of utilization of land and labor resources. Basically, the labor of women with small children not engaged in public production, of pensioners, of the able-bodied population during the interseasonal period, of adolescents during vacation time, and of the urban population during days off and periods of leaves is utilized here. On private plots and in orchard-garden cooperatives products are created with labor, which in the absence or

insufficient development of private plots is not utilized at all, or is utilized partially. Therefore, the level of development of private plots should be tied up primarily with the level of utilization of these additional resources.

Economic interests are decisive factors in intensification, as in all other processes of agricultural production. Only the processes in the economy, in whose implementation enterprises and organizations, as well as their workers, are interested, are successful. The existing economic mechanism does not ensure such interest in the intensification of utilization of land, labor, and material resources. This happens for a number of reasons.

Principles similar to the requisitioning of grain by force operated in the area of planning until recently. Kolkhozes and sovkhoses were obliged to sell to the state essentially all products, except for the part that, in the opinion of superior bodies, could be left for intrafarm production and nonproduction needs. At the same time, in many cases the structure of assignments met neither the interests, nor the capabilities, of farms. Disruptions in the fulfillment of plans were the consequences of such planning. For example, on the average, during the years of the 10th and 11th Five-Year Plans about 70 percent of the potato growing kolkhozes and sovkhoses in the RSFSR fulfilled plans for state purchases 39 or 40 percent. During the indicated period the bulk of the republic's farms sold less than one-half of the assigned volume of grain, sunflower seeds, and a number of other crops to the state.

A constant need for intensification is felt when extensive variants of development negatively affect the formation of wages and other funds of enterprises. An analysis shows that there is no such a clear connection among the mentioned indicators. Moreover, an inverse relationship is valid for most farms. For example, in 1984 a total of 2,948 farms producing 1,265 rubles of gross income per average annual kolkhoz member distributed 1,800 rubles in the form of wages and bonuses. Groups of kolkhozes with a profitability of up to 5, 10, 15, and 25 percent (they include 13,500 kolkhozes) and gross income of 1,890, 2,075, 2,272, and 2,598 rubles per average annual worker respectively distributed against wages and bonuses much less than unprofitable ones, that is, 1,632, 1,631, 1,608, and 1,656 rubles. Only in the group of kolkhozes with a profitability of more than 40 percent wages were slightly higher than on unprofitable farms. At the same time, less than 7 percent of the additionally derived gross income was allocated for an increase in wages. The connection between results and wages is even weaker on sovkhoses.

It would seem that, once there are no advantages in wages, they should be in production development funds. However, here too we see a picture similar to that of wages. In 1984 kolkhozes, which did not have gross income, spent 1,710 rubles per average annual kolkhoz member on capital investments and major repairs. Unprofitable farms, which did not make deductions of a single ruble to indivisible funds, spent 1,564 rubles on the same purposes. A number of kolkhozes (4,926), which had gross and net income, did not deduct them into indivisible funds, but spent them on economic incentives and other needs. However, this did not prevent them from spending 4,275 rubles per average annual kolkhoz member on capital investments and major repairs. A total of

12,700 kolkhozes, which deducted up to 20 percent of the gross income into indivisible funds, spent 1,204 rubles per average annual worker on these purposes.

There is no correlation between the cost accounting and full (with due regard for appropriations from the budget, centralized funds, and other sources) levels of profitability. Each of them changes irrespective of the other. The centralization and distribution of financial resources are not directed toward a rise in the level of cost accounting. After a redistribution an unprofitable farm can have much more funds than a profitable farm.

Orientation toward intensification requires a fundamental restructuring of the economic mechanism. An expansion of the economic independence of enterprises and an increase in their economic responsibility for production results and expenditures are the basic directions in this restructuring. The decree of the CPSU Central Committee and the USSR Council of Ministers "On Improving the Economic Mechanism of Management in the Country's Agro-Industrial Complex" maps out specific measures to extend the rights of local management bodies and agricultural enterprises in the area of planning.

Planned assignments for purchases of agricultural products will be set on the basis of the volumes and standards of return of capital investments and material resources. Instead of the planned wage fund a standard of its formation depending on the value of sold products is assigned and instead of assignments for volumes of deductions of profit into the budget, a standard of payments differentiated depending on natural-economic conditions.

As of 1986 limits of capital investments and material resources are assigned to Union republics, krays, oblasts, and rayons in a single line throughout APK without a breakdown by sectors. Local bodies are granted the right to choose efficient directions in the utilization of resources.

As of 1987 assignments for deliveries of products to centralized stocks, instead of purchase plans, will be given to Union and autonomous republics, krays, and oblasts. All above-plan resources remain at the disposal of local bodies. They determine the assortment of output of processed products. An interrepublic (interoblast) exchange of products is permitted.

Agricultural enterprises have received the right at their discretion to dispose (that is, to choose sales channels, prices, and so forth) of all above-plan products and of 30 percent of the planned fruit and vegetable products. The number of indicators in planning and reporting documents is reduced by 30 to 40 percent.

The economic responsibility and interest of enterprises and organizations in plan fulfillment increase. When plans are not fulfilled during the current period (quarter, year), the debt is transferred to the following period. With respect to grain the allocation of fodder from state resources is reduced simultaneously. When the plan for the sale of grain, milk, livestock, and poultry, as well as of the products of the basic sector, to the state is not fulfilled, farm managers and specialists are fully or partially deprived of bonuses.

Agricultural enterprises in Stavropol Kray and in six RAPO of the Russian Federation operating under experimental conditions have an even broader independence. The right to choose the production structure has been granted to them. Kolkhozes and sovkhozes independently, on the basis of economic considerations, determine the volumes of production and utilization of products. Purchase plans are assigned to officials in charge of procurement of agricultural products. The sale of products by agricultural enterprises is made on the basis of forward contracts with procurement organizations. Such an approach will make it possible to choose a level of production intensification based on the real resources of enterprises.

The right of enterprises in the choice of suppliers and consumers, in the conclusion and dissolution of economic contracts, and in the determination of the subject of contract, of the volumes and terms of deliveries of products and services, and in the Kuban Agro-Industrial Combine of the prices of products and sanctions for breaches of contracts extends under experimental conditions. At the same time, the planned nature of external relations is attained owing to the coordination of plans before the beginning of the production process.

The traditional planning scheme, when the task of plan coordination is accomplished by superior bodies and limits of resources and assignments for deliveries of products are presented to enterprises and organizations, suffers from a variety of shortcomings. First, the load on central planning bodies increases excessively. Although theoretically they have the possibility of choosing optimal relations among subordinate enterprises and organizations, in practice, it is not possible to do this owing to the complexity of relations, departmental barriers, and overloads of staff workers. Moreover, interests do not always stimulate them to search for the best solutions. Second, the initiative of enterprises and organizations in the search for suppliers and consumers, in the rationalization of relations with partners, and in the choice of the structure of utilized resources and sold products is minimized. Third, in such a system suppliers have the priority, because enterprises strive for an increase in the limit of allocated resources and for a reduction in assignments for deliveries of their own products. This leads to deficits and under deficit conditions the final say always rests with the producer.

Satisfaction of the population's needs for food and nonfoodstuffs from agricultural raw materials is the object of APK functioning. This task can be fully performed provided the regulating signals concerning the proportions in production development go from consumers, that is, from the population to retail and wholesale trade and further--to processing enterprises, agriculture, and service and capital producing sectors.

Thus, existing regulating effects from the producer to the consumer must be turned back. This is possible only provided the producer and the consumer regulate their activity on the basis of the economic contract, if the consumer has a priority over the producer, if the producer is engaged in expanded reproduction of means received from consumers, and if the producer competes with the consumer for a better satisfaction of his needs.

An expansion of independence does not signify a weakening of the planned nature. Abandoning petty tutelage from above does not mean that it is necessary to abandon the planning of details. When coordinating plans, the producer and the consumer are obliged to take all the factors of mutual interest into consideration. Without this the fulfillment of plans is inconceivable. Only under new conditions this coordination should proceed directly between interested parties. It is necessary to consolidate it by economic contracts. They specify dates of deliveries and requirements for the quality of products (concerning agricultural raw materials, the content of useful substances; concerning nonfoodstuffs, the size, color, style, and so forth; concerning production-technical and agrochemical services, dates of performance of operations and quality guarantees).

In relations between the producer and the consumer there are always dozens of nuances, which are not visible from above, but are extremely important for a successful fulfillment of plans, improvement in the quality of final products, and increase in production efficiency. The right to solve them should be granted to the interested parties.

For example, the Kuban Combine, having its own trade network, the right to set prices, and the possibility of delivering high-quality agricultural products and foodstuffs to the population, in 1985, as compared with 1984, increased the retail trade turnover 4.4-fold, bringing it up to 18.9 million rubles. Enterprises forming part of the combine got the opportunity of independently using the funds remaining after the reimbursement of material expenditures, payment for services, deductions into the budget, and so forth. There is no need to give them the profit plan, limits for wages and maximum allocations, and standards of formation of enterprise funds and their expenditure. An uncompensated withdrawal of financial resources at the discretion of supreme bodies is prohibited categorically.

Taking into consideration that it is very complicated to force a worker put in the position of a hired laborer to work intensively and it is even more complicated to control his work, it is necessary to restructure labor organization and wages so that workers are put in the position of managers provided with the right to utilize resources and products forming the wage fund with due regard for results and expenditures.

Measures to expand economic independence give positive results only if they are implemented simultaneously with an increase in the economic responsibility of enterprises and organizations for final results and expenditures.

For this the experiment in Stavropol Kray and in six RAPO of the RSFSR envisages a transition to full cost accounting and self-support. Uncompensated production financing at existing enterprises and organizations from the budget and other sources has been reduced to a minimum. Payments are made mainly through price channels for sold products and commissioned new construction or reconstruction projects. Funds previously allocated free of charge for current and capital expenditures are included in prices and their markups and are issued for products. At the same time, the sum of increase in prices is equal to the sum of decrease in uncompensated financing, that is, neither the interests of the state, nor of enterprises and organizations, are

encroached upon. Centralized budget funds are assigned basically for the accomplishment of major national economic tasks connected with the development of new regions, establishment of new enterprises, and development of the APK social infrastructure.

The formation of the fund of distribution according to labor at enterprises and organizations, as well as in intraeconomic subdivisions according to the residual principle, that is, by deducting from the value of sold output all expenditures, taxes, payments (including for a breach of contractual obligations), and deductions into enterprise and centralized funds, is a guarantee of self-support. It is necessary to abandon guarantees of wages for labor not giving final results. To maintain a certain level of wages, during unfavorable years insurance funds should be created from deductions during favorable years. Only with the residual principle of formation of the wage fund producers will be fully interested in saving all types of current and capital expenditures, raising labor productivity, improving the quality of products, protecting them from embezzlers, and delivering them to the consumer.

It is still too early to judge the results of the expansion of the independence of enterprises and organizations and increase in their economic responsibility both in experimental projects and throughout the country as a whole. Therefore, we will refer to the experience of agricultural enterprises in the Hungarian People's Republic, which have been operating under conditions of independence and self-support since 1968. During 1950-1965 capital investments in the agriculture of the Hungarian People's Republic increased five to eight times more rapidly than gross output. The introduction of the new economic mechanism made it possible in 1970-1980, with a growth of 9 percent in capital investments, to increase gross output by 41 percent. The share of agriculture in capital investments in the national economy was lowered, the number of tractors per 100 hectares of arable land was reduced, and the yield of grain crops increased by 22.4 quintals per hectare and the milk yield per cow in herd, by 1,452 kg.

An overall improvement in the economic mechanism in the USSR APK on the basis of the principles approved by the 27th congress and the removal of obsolete dogmas and instructions and unnecessary restrictions will contribute to the activation of every worker, subdivision, and enterprise.

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CSO: 1824/454

AGRO-ECONOMICS, POLICY, ORGANIZATION

ROUNDTABLE ASSESSES RAPO OPERATIONS UNDER NEW TERMS

Moscow EKONOMIKA SELSKOGO KHOZYAYSTVA in Russian No 8, Aug 86 pp 49-53

[Unattributed article: "RAPO In the New Conditions"]

[Text] The editorial departments of the journal EKONOMIKA SELSKOGO KHOZYAYSTVA and EKONOMICHESKAYA GAZETA and the All-Russian Higher School of Management of the Agro-Industrial Complex held a "roundtable" meeting with chairmen of RAPO councils devoted to the work of rayon agro-industrial associations under new terms.

M. M. Makeyenko (editor-in-chief of the journal EKONOMIKA SELSKOGO KHOZYAYSTVA) noted that RAPO as the primary link in the system of management of the agro-industrial complex has great powers to improve economic mutual relations, to utilize more efficient methods of management, and to choose efficient organizational structures of production as applied to local conditions. Economic restructuring in the agro-industrial complex will give the expected effect provided workers at every level of management clearly know their rights and duties and fulfill them strictly.

The decree of the CPSU Central Committee and the USSR Council of Ministers "On the Further Improvement in the Economic Mechanism of Management in the Country's Agro-Industrial Complex" grants extensive rights to RAPO in the area of planning, capital construction, financing, crediting, recording and reporting, material and technical supply, scientific and technical progress, labor and wages, and regulation of intersectorial production and economic relations and in problems of personnel selection. Favorable economic and organizational prerequisites for management have been created. How these possibilities are realized in economic activity will now depend largely on RAPO. Now RAPO must head the work on the fullest and most efficient utilization of the entire production potential. Under these terms it is important to generalize the experience that has already been accumulated, to discuss ways of improving work, and to uncover existing difficulties.

Problems of improving the planning and economic stimulation of production evoked great interest among the participants in the meeting. In their opinion, the transition to the normative method of planning the production and purchases of agricultural products, as well as to the distribution of material

and technical facilities with due regard for the economic evaluation of land and the provision of fixed capital and labor and other resources, will make it possible to increase the scientific substantiation of plans and, at the same time, to raise the responsibility of managers of farms, enterprises, and organizations for an efficient utilization of the production potential.

Mastering normative planning methods is not a simple task. As A. G. Zenkin (Yelanskiy RAPO, Volgograd Oblast) noted, RAPO workers must increase the demands on the competence of specialists of all ranks. It is necessary to get out from the range of service of the association itself and, when the paper flow is reduced, to pay more attention to managerial work in all Yelanskiy Rayon.

To ensure equal terms of management for all kolkhozes and sovkhozes, it is necessary to take into account the diversity of the rayon's conditions and on this basis to control the correctness of application of normative methods. Distributing the volumes of purchases throughout farms, RAPO councils should take a number of factors into consideration, that is, existing specialization, personnel support, road conditions, availability of transport facilities, and many other things. There is a need for large-scale laborious work when substantiated assignments for the production of products, norms of expenditures, and determination of rewards for final results are set.

At present the strengthening of the antiexpenditure mechanism is reinforced by a material incentive system: A total of 70 percent of the saved sums can be paid as incentives and overexpenditure can be compensated for with capital provided for wages or the bonus fund. This will require a qualitatively new level of recording of material expenditures in primary labor collectives and their transfer to the terms of the collective contract and cost accounting. Thus, an improvement in the system of the economic mechanism affects not only the work of the staff of RAPO, kolkhozes, and sovkhozes, but also low-level links--directly labor collectives.

Simultaneously with control figures for purchases of products, limits of capital investments and of deliveries of basic types of material resources determined on the basis of norms taking into account the availability and level of utilization of the production potential are also assigned. Evaluating this phenomenon positively, at the same time, RAPO managers noted the great difficulties encountered occasionally. For example, P. I. Matyashov (Kamenskiy RAPO, Voronezh Oblast) believes that stocks for material and technical provision within the limit should have one wholesale factory price, whereas above-limit ones, a higher price, similarly to the practice of electric power use. For example, in 1985 the rayon did not complete fall plowing owing to the lack of diesel fuel, because appropriate stocks were used up. For above-limit fuel farms would have paid twice or three times more and would have plowed the fall area, but they did not have such a right. There are frequent cases of imposition of machines, which are not needed. It was suggested that equipment not in demand be returned to the plant.

P. P. Kazakov (Kinel--Cherkasskiy RAPO, Kuybyshev Oblast) notes that planning under new terms also constrains maneuverability. In fact, intensive technologies are detached from the system of material and technical

provision: Areas are determined, but funds are not allocated. As long as farms do not have the necessary set of machines envisaged by intensive technology and a sufficient number of chemical plant protection agents, they will incur big harvest losses. Attention is drawn to the unsatisfactory organization of supply of fuel and lubricants. An imaginary saving leads to the nonfulfillment of technological operations. Annual fuel stocks are not known. Supply is carried out quarterly with careful consideration of the distribution of stocks during the previous year, when there was the same shortage and some technological operations were not fulfilled. The arrival of fuel during the winter period can no longer rectify the situation.

The speakers noted that RAPO needed more independence in the solution of many problems, in particular in the selection of the structure of sown areas. A. N. Grinevich (Khislovichskiy RAPO, Smolensk Oblast), using the example of flax growing farms, showed to what an excessive regulation in the planning of sown areas led. Flax is a labor and science intensive crop. High purchase prices ensure the interest of farms in its cultivation. However, flax products produced and delivered to bases, for which farms have received money, lie at flax bases for years, waiting for processing (a 4-year reserve has accumulated in the rayon) and lose their consumer properties--a natural shrinkage occurs. At the same time, the grain plan has not been fulfilled. A correction of the plan for sown areas would have made it possible to avoid such trouble. Therefore, an extension of the rights of farms and RAPO envisaged by the decree of the CPSU Central Committee and the USSR Council of Ministers "On the Further Improvement in the Economic Mechanism of Management in the Country's Agro-Industrial Complex" received the approval of all the participants in the meeting.

Problems concerning an extension of the rights and responsibility of kolkhozes, sovkhoses, and RAPO in the area of capital construction drew much attention on the part of those gathered. The lag in housing, cultural and every-day conditions of rural residents behind the living conditions of the urban population and the weak development of the infrastructure and of the processing industry means that an increase in the efficiency of capital construction in rural areas is among our most important problems.

Improvement in the economic mechanism in the country's APK envisages the development of capital construction plans by the farms themselves on the basis of control figures for capital investments and the volume of construction and installation work. Special attention is drawn to the observance of normative periods of construction of projects.

The responsibility of farms for an efficient utilization of capital investments increases significantly. All farms have been granted the right to order planning estimates for the rebuilding and reconstruction of production projects.

The participants in the meeting noted that an expansion of managers' rights for the development of planning documents should not lead to a deterioration in the quality of planning solutions and to a dissipation of capital investments and material and labor resources over numerous projects. It is not easy to solve these problems, because a number of farms and RAPO are not

prepared for construction work. L. I. Tupitso (Blagovarskiy RAPO, the Bashkir ASSR) noted that the idea of establishment of a single construction service has not been carried through in many rayons. In some of them a bulky administrative machinery has been formed and there are no skilled builders. RAPO as a single manager of all funds and resources has big capabilities for an efficient organization of capital construction.

The further buildup in the volumes of construction in rural areas is possible only on the basis of an efficient functioning of the economic mechanism and strengthening of material and engineering support. V. P. Zolin (Privolzhskiy RAPO, Astrakhan Oblast) drew attention to the fact that to this day the application of the economic method in construction, for example, has been associated with certain difficulties in financing, especially in the provision of materials. However, another circumstance, that is, that during the year every farm manager always has an acute need for the construction of some unplanned inexpensive, but very necessary, project--for example, a boiler room operating on a more economical fuel--should also be taken into consideration. The inclusion of such a project in the plan and the performance of planning work will require several years.

Many farms have the possibility of building simple unplanned projects by the economic method if building materials and equipment are available. Granting farms the right to carry out such construction in a decentralized manner will make it possible to more efficiently solve problems of strengthening the material base and to meet immediate needs. Here an important role belongs to RAPO. It should create optimal conditions for every farm for an unconditional fulfillment of planned assignments. Obviously, it is necessary to have centralized resources for unplanned projects. RAPO transport and the supply of paper and copying equipment also need centralized limits.

RAPO carry out work on reinforcing constituent enterprises and organizations with highly skilled personnel, as well as retaining them in production. Demands on the managerial staff and specialists are increasing.

Under present conditions the system of personnel training and improvement in skills requires a fundamental reorganization. The close integration of educational institutions with production and science and the new principles of their interaction make it necessary to look in a new way at the entire system of training and retraining personnel for the country's agro-industrial complex. V. D. Kostin, rector of the All-Russian School for the Management of the Agro-Industrial Complex, noted that it was necessary to make the professional growth of specialists and the establishment of a wage level for them directly dependent on the results of improvement in skills.

As the discussion showed, the selection of appropriate personnel for work in RAPO was complicated by the fact that their wages were lower than on farms. It is hardly fair, L. I. Tupitso believes, that the same wages are established for RAPO chairmen, regardless of the volume of work, the conditions in a rayon, and the number of farms forming part of RAPO. At the same time, the wages of a sovkhos director and a kolkhoz chairman are higher than those of a RAPO chairman and the wages of farm specialists, 1.5 times higher than those of agroprom specialists. The wages of a worker in the state veterinary

service are one-half of those of a main specialist on a sovkhos. It is well known that veterinary well-being is an indispensable condition for the growth of animal husbandry productivity. Nor is the establishment of the same wages for specialists (zootechnicians, land use surveyors, and so forth) with a different degree of responsibility justified. Under these conditions it becomes difficult to reinforce the RAPO machinery with highly skilled personnel, which gives rise to personnel turnover on farms and in the agroprom.

R. S. Tikhankin (Spasskiy RAPO, Ryazan Oblast) made the suggestion that a system of wages for farm managers and RAPO specialists be built so that they have moral and material incentives for work in RAPO. Then the RAPO machinery will be authoritative and effective.

Furthermore, problems of giving specialists housing and providing them with transport and normal conditions for work are solved with difficulty, which has a negative effect on an efficient staffing of regular posts. Ye. N. Ratkov (Prokopyevskiy RAPO, Kemerovo Oblast) believes that the provision of better housing conditions in allied industrial enterprises has a decisive effect on personnel turnover from rural areas.

At the present stage it is complicated to find a kolkhoz or sovkhos manager. As V. P. Zolin noted, material claims and sanctions against the manager of an agricultural enterprise can be imposed by 24 organizations, beginning with the Society for the Protection of Nature and the Society for the Protection of Monuments and ending with the fire inspectorate and so forth. The latter, not consulting anyone in the rayon, can formulate a punitive document and make demands and claims, which constantly diverts managers from direct and urgent matters. An increase in independence and responsibility for final work results necessitates working out the status of the manager of an agricultural enterprise and standard official instructions of specialists with a clear formulation of the rights and duties of farm managers. Standard instructions should be attached to specific conditions--this is the task of scientific subdivisions. RAPO themselves should have the right to determine the regular number of workers and to differentiate wages.

Proposals on the organization of an improvement in the skills of a reserve of managers were expressed. It is advisable to shorten the period of practical training from 5 to 3 months. At the same time, however, it is necessary to change the methods of implementation of training. It is useful to implement practical training on an economically developed farm, which the board of an oblast, kray, and republic agroprom could determine. Managers of these farms should be paid an appropriate reward and the responsibility for the quality of practical training should be imposed on them.

Participants in the meeting paid much attention to problems of economic interrelations of kolkhozes and sovkhos with service organizations. These interrelations are based on general principles concerning an evaluation of the activity, profit distribution, and formation of economic incentive and wage funds for workers of service enterprises and organizations. Measures to increase the interest of kolkhozes, sovkhos, enterprises of the material and technical provision system, procurement organizations, and processing

enterprises in extensively applying modern industrial means of production, introducing advanced equipment and technology and the achievements of scientific and technical progress, and on this basis ensuring an increase in output with a decrease in the expenditures on it are envisaged.

In turn, the economic interests of industrial supplier enterprises and organizations engaged in material and technical provision, production servicing, and procurement are directed toward a fuller satisfaction of the needs of kolkhozes and sovkhoses and an increase in the efficiency of agricultural production. These measures represent an important stage in the direction of bringing the economic interests of participants in agro-industrial integration closer together.

The practical experience of rayon agro-industrial associations in a number of republics makes it possible to uncover some general tendencies in an improvement in the economic interrelations of participants in agro-industrial production. The RAPO council carrying out management on a democratic basis has big powers to improve economic interrelations. It has the right to revise the rates of partners' services and, thereby, to actively affect farm expenditures, that is, to introduce amendments in plans for the servicing of enterprises, in particular in the volumes of performed work, to redistribute centralized funds for the purpose of their more efficient utilization, and so forth. Conditions for the application of more efficient methods of management of all services and for the selection of efficient organizational structures as applied to local conditions are created in RAPO. The efficiency of operation of various types of service production facilities is determined with due regard for sectorial specificity.

At the same time, RAPO managers noted that relations among kolkhozes, sovkhoses, and service and processing enterprises are still far from perfect. In the last few years there has been a redistribution of kolkhoz and sovkhos income in favor of service organizations, as well as a completely justified derivation of profit by them. Therefore, under new terms of management in practice RAPO will have to increase managerial functions in the mechanism of income distribution. It is necessary to more actively utilize such economic levers as a change in the rates of performed services and a stricter control over the concluded contracts. However, as A. G. Zenkin draws attention, service enterprises make arbitrary additional changes in these contracts, mostly in their favor. That is why control over the fulfillment of contracts is an important task of RAPO workers.

Highly evaluating the standard contract as a guarantee of obtaining a harvest of agricultural crops on irrigated land, at the same time, RAPO managers noted that organizations, which signed a contract, were materially responsible for the deficiency of products through the fault of one of these organizations. At the same time, RAPO services act as the main arbitrator. It is necessary to expand the system of such contracts, which will contribute to a fuller utilization of reserves existing in a rayon.

Along with specialized service enterprises farm workers perform certain operations for sovkhoses and kolkhozes. For example, the bulk of the operations are serviced by the Selkhozenergo organization and technical repair

enterprises performing the technical servicing of mostly energy-saturated tractors. At the same time, farm workers are also engaged in technical servicing. Such a duplication of functions leads to a dissipation of funds. Therefore, it is necessary to establish all services at the base of well-equipped specialized enterprises and on their basis to carry out an overall servicing of kolkhozes and sovkhoses.

In A. S. Kryuchkov's opinion (Yegoryevskiy RAPO, Altay Kray) an extensive introduction of cost accounting principles, the collective contract, and the check form of mutual settlements of accounts contributes to a well-coordinated work of organizations servicing agriculture and to their close interaction. The efficiency of work largely depends on RAPO managers and chiefs of administrations.

A. Ye. Ratkov shares this position, considering the cost accounting principles of operation of repair facilities most efficient. At the same time, he assumes that the work of the repair base should be made dependent not on the volume of performed repair operations, but on the length of interrepair periods. It is necessary to improve the wage system of workers at the Scientific Production Association for Agrochemical Services to Agriculture, whose wages are lower than those of the workers of the farms themselves. Furthermore, 80 percent of the wages are handed out. This lowers their interest in increasing final results. Specialists at service production facilities do not pay sufficient attention to the preservation of and increase in soil fertility.

RAPO should exercise control over land use and implement the necessary measures for environmental protection and an efficient utilization of natural resources. At the same time, many managers are alarmed by the situation with land recultivation. The land preservation problem is acute in Merovo Oblast, where coal is mined by the open method. Today Prokopyevskiy and some other rayons are virtually surrounded by open pits. Here the microclimate is disturbed, soil is desiccated, and there is an incorrect attitude toward the land recultivation problem. More than 3,000 hectares of land, including up to 1,500 hectares of arable land, have been withdrawn in the rayon during the 11th Five-Year Plan alone. Despite the fact that mines have a special recultivation service, they have not restored a single hectare of land during this time.

The sphere of circulation, prevention of losses, and ensuring the preservation of products at all the stages of their production, procurement, transportation, processing, storage, and sale represent an important link of RAPO activity. RAPO takes the necessary measures so that all the agricultural products produced and intended for sale are accepted by procurement and other organizations. However, the path of products to the consumer is thorny--V. P. Zolin noted.

Astrakhan Oblast, which is rightly called the "all-Union garden," ships a large quantity of products outside the oblast's borders, including to Moscow. However, as soon as a farm ships products, it ceases to be their manager. On their path products pass through three or four stages: shipper, representative of transport (water or railroad), customer, to whose address

products are shipped, and representative of ports, where they are unloaded. Even with due regard for the fact that in the last few years the oblast has conducted experiments on the shipment of vegetables to Moscow and Leningrad by vegetable supervans, where a microclimate for the preservation of the quality of products is created, the expected result is not attained. This is explained by the fact that during the period of delivery of products neither the railroad, nor water transport, is responsible for them. Transport workers are responsible only for the total quantity of freight--containers. Representatives accepting these products are concerned only about their own interests. With such a shipment the national economy loses millions of rubles.

The people of Astrakhan Oblast try to solve the problem of preservation of quality on a contractual basis. For example, procurement organizations in the city of Ufa proposed that products be sold directly in Astrakhan Oblast. A representative arrives and stipulates the terms of the sale of products--their types, quantity, and quality. Farm representatives accept these products on the basis of quantity and quality directly at shipping wharves and still have the right of choice. The results have proved to be excellent--90 to 95 percent of standard products, whose manager, after purchasing them, becomes a fruit and vegetable trade organization and so forth. The customer representative accompanies products throughout the trip, controls their unloading, and is personally responsible for quantity and quality. This experience of Privolzhskiy Rayon has proved to be very effective and losses of products have dropped sharply. It should be introduced and popularized more widely.

As the participants in the "roundtable" discussion noted, the measures adopted by the decree of the CPSU Central Committee and the USSR Council of Ministers "On the Further Improvement in the Economic Mechanism of Management in the Country's Agro-Industrial Complex" will make it possible to take the needs of agriculture more fully into consideration.

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CSO: 1824/455

MAJOR CROP PROGRESS AND WEATHER REPORTS

ADVICE ON PROTECTING POTATO CROP

Kiev SILSKI VISTI in Ukrainian 7 Aug 86 p 1

[Article, published under the rubric "Timely Advice," by L. Sukhomlynov, deputy chief, Vegetable, Squash, Potato Production Administration, UKSSR Gosagroprom; Candidate of Agricultural Sciences V. Kutsenko, deputy director, Ukrainian Scientific Research Institute of Potato Farming; Candidate of Agricultural Sciences V. Chaban, deputy director, Ukrainian Scientific Research Institute of Plant Protection: "In the Potato Fields"]

[Text] Favorable weather conditions for the development of late blight of potato have occurred in the principal potato-growing zones. That acreage on which more than 20 days still remain before harvesting should be treated with one of the following fungicides: an 80 percent solution of cineb (2.5 kg per hectare); a 90-percent solution of copper oxychloride (2.6 kg per hectare); an 80 percent solution of cuprozan (2.4 kg per hectare); a 75 percent solution of polycarbazine (2.5 kg per hectare); a 25 percent solution of rydomel (0.8-1 kg per hectare); artserid (a mixture of one part rydomel and eight parts polycarbazine) -- 2.4-3.2 kg per hectare. This will make it possible to reduce the extent to which the tubers are attacked by late blight, both during growing to maturity and at harvest.

Weather conditions this year have favored the development of the Colorado potato beetle. Massive appearance of beetles of the summer's first generation were observed in the forested-steppe and steppe zones in the first 10 days of July and in the Polesye in the second 10 days.

While beetles will be unable to cause appreciable damage to the tubers on early-planted fields, losses can be appreciable in plots with midseason and late-maturing varieties. For this reason it is essential continuously to monitor the fields and take protective measures if needed.

Actions to combat the Colorado potato beetle should be taken simultaneously with spraying or dusting potatoes against diseases. An insecticide with a limited period of effect should be applied: a 2.5 percent solution of detsis (0.3 kg per hectare); a 50 percent solution of volaton (1.2 liters per hectare); a 40.8 percent solution of dursban (1.5 liters per hectare); a 20 percent solution of phthalophos (4 liters per hectare) or a 50 percent mixture

of phthalophos (1.6 kg per hectares); an 80 percent mixture of chlorophos (1.5 kg per hectare).

If infestation of fields is not uniform, selective and field-edge spraying or dusting produces good effect.

Soon the bulk of the potato crop will reach harvest. Organization of this work begins with forming harvesting and hauling teams and drawing up work schedules for each field, indicating harvesting method, quantity of equipment, and methods of subsequent potato processing and storage. It is essential to check the readiness of equipment, sorting and grading stations, storage facilities, sacks and boxes.

Special attention should be devoted to seed potato plots. These should be harvested on a first-priority basis. Steps should be taken now to inspect the fields, determine the anticipated harvest and seed potato requirements. Superior reproduction of zone-tailored and promising varieties should be identified and designated for seed stock.

In order to prevent losses of small tubers, rubber tubing with an inside diameter of 10-12 and outside diameter of 24-27 millimeters should be slipped on the rods of the combine's main lift. In order to prevent potatoes from escaping into the cracks between the side shields of the main lift and the clod breaker drums, the rubberized belts on the side shields should be adjusted up toward the drums; if following this adjustment the gap along the entire path exceeds 10 millimeters, new belts should be fabricated and installed.

Loss of tubers between the drums and side panels of the first screen can be avoided by placing additional shields of rubberized fabric. These shields should not touch the drums at the screen extreme rear position.

A 30 millimeter gap should be set between the lift bed and a well run-in drum along its entire length. To accomplish this, fabricate and place on the main lift drive shaft bearing mounts spacers consisting of a metal strip measuring 10 x 45 x 220 mm. Secure the bearing bodies to them with screws, and weld the spacers to the bearing mounts.

Set the pressure in the clod-breaker drums according to size of clods (to 0.3 kg per square centimeter; reduce this to 0.1 kg per square centimeter for readily-sifting soils).

Cutting of the potato plants is an important procedure in readying a field for harvest. This procedure will accelerate physiological maturing of the tubers and thickening of their skin, which will prevent mass spread of potato diseases, will reduce mechanical damage to the tubers, and will improve operation of the potato harvesters. Cut the plants with KIR-1.5B rotary cutter-grinders, and then haul the materiel out of the field. This will prevent reinfection of the tubers with late blight.

To prevent damage to the potatoes, carefully adjust the machinery and check digging depth. It is very important not to overload the separating elements with excessive soil.

Many tubers are damaged during sorting and hauling. For this reason it is essential to reduce the number of hauls to a minimum. After harvesting, seed potatoes should be stored for 2 or 3 weeks under open-sided cover or in temporary potato pits, where they will dry, cure, and signs of disease appear on affected tubers. In addition, this procedure makes it possible to reduce harvest loss to soft rot, ring rot, and wire stem.

After thorough processing, store away the healthy tubers.

3024

CSO: 1811/38

MAJOR CROP PROGRESS AND WEATHER REPORTS

INTENSIVE GRAIN GROWING PRACTICES URGED IN UKRAINE

Kiev SILSKI VISTI in Ukrainian 7 Aug 86 p 1

[Lead article: "Intensive Grain Production"]

[Excerpts] It was stressed at the 27th CPSU Congress that intensive technology is the key to resolving the problem of grain production and maintaining grain yields. Practical realities are indisputably demonstrating the validity of this axiomatic truth. Reports on excellent results from intensive-technology grain acreage are coming in from various parts of the republic.

Intensive technology is producing the anticipated results under various soil and climatic conditions, of course if all requirements of this advanced cropping technique are observed and if one approaches its adoption in a scientific way, without excessive simplification. Unfortunately at the present time there are one, two or even more farms practically in every rayon where this progressive technology, to put it mildly, has been dropped back to the level of traditional farming practices. Why is this? The sole reason is that on these kolkhozes and sovkhoses they have ignored a number of procedures and have failed to observe the proper field work timetable. Intensive technology does not forgive mistakes. It is based first and foremost on highly-sophisticated tillage and production and on a high level of professional knowledge and skills on the part of agronomists and farm machinery operators.

This fall intensive technology will be employed on a total of 4.5 million hectares -- this represents more than half of this republic's winter crop acreage. It is the duty of party organizations as well as soviet and government agencies to foster dissemination of the experience and know-how of the top-performing grain growers and to assist kolkhoz and sovkhos specialist personnel and farm machinery operators in thoroughly and comprehensively analyzing the causes of failures. The CPSU Central Committee and USSR Council of Ministers decree entitled "Measures to Increase Stability of This Country's Grain Farming and to Increase Grain and Forage Resources in the 12th Five Plan" should become a basic point of reference for everybody.

We are already aware of instances where, failing to observe proper crop rotation, certain farm managers and specialist personnel are placing in doubt

the fate of the harvest in the second year of the five-year plan. For example, on the Kolkhoz imeni Sverdlov, the Chervonyy Prapor Kolkhoz, the Bilshovyk Sovkhoz, and the Sovkhoz imeni Gagarin in Aleksandriyskiy Rayon, Kirovograd Oblast, spring crops have been planted on 40-47 percent of fallow acreage. This is a gross violation of winter cropping practices in general and of progressive practices in particular. There are similar examples of poor crop management in a number of rayons in Odessa and Dnepropetrovsk oblasts. On the Udarnyk Sovkhoz in Krasnoarmeyskiy Rayon in Donetsk Oblast, the 10 Pyatyrichka Sovkhoz in Pervomayskiy Rayon, Crimean Oblast, and on the Kolkhoz imeni Karl Marks in Starobelskiy Rayon, Voroshilovgrad Oblast, fallow acreage is not being properly cared for; fields in which winter crops will be planted have become filled with weeds.

There are no trivial matters in intensive technology. Some specialists neglect such an important cropping practice as liming or applying gypsum to the soil (depending on conditions), forgetting that if the soil is not neutralized one can scarcely expect mineral fertilizers to work effectively.

It is the duty of rayon agroindustrial association councils to ensure that each and every kolkhoz and sovkhov strictly observes all the requirements of advanced farming practices, that they prepare the soil, seed, and equipment for the next planting today, without losing any time.

3024

CSO: 1811/38

MAJOR CROP PROGRESS AND WEATHER REPORTS

ON PROTECTING SUGAR BEETS IN UKRAINE AGAINST DISEASE

Kiev SILSKI VISTI in Ukrainian 6 Aug 86 p 2

[Article, published under the rubric "Timely Advice," by S. Vovchuk, deputy chief, Plant Protection Administration of the Ukrselkhozkhimiya Association; Candidate of Agricultural Sciences A. Korniyenko, head, Phytopathology Laboratory, All-Union Sugar Beet Scientific Research Institute; Candidate of Agricultural Sciences O. Broyakivska, senior scientist, Phytopathology Laboratory: "Sugar Beets: Protection Against Diseases"]

[Excerpts] This year conditions in many oblasts of this republic have been favorable for the development of leaf spot and other sugar beet diseases: frequent rainfall, high humidity, temperature during the day above 20 degrees and about 15 degrees at night.

Surveys have shown that early stages of leaf spot are present on 25 percent of sugar beet acreage. Further spread of this disease is anticipated. Therefore preventive treatment of sugar beet acreage is called for.

The farms in Vinnitsa and Poltava Oblast have intelligently organized efforts against plant diseases. In these oblasts approximately half of total sugar beet acreage has already been sprayed with appropriate compounds. This work must be intensified in Cherkassy, Kirovograd, Kiev, and other oblasts. Any delay can lead to loss of a substantial part of the sugar beet crop and to a decrease in sugar content, which has occurred in past years.

In the hot, dry weather conditions in the southern and southeastern oblasts of this republic, we soon expect the spread of powdery mildew, which has already stricken sugar beet seed plots, and in some places also acreage designated for commercial harvest. Leaves affected by this disease turn yellow and die prematurely, and beetroot growth and accumulation of sugar in the roots stop.

Chemicals recommended to combat powdery mildew include spraying of colloidal sulfur (wetted powder), applied in the amount of 6 kilograms per hectare, and a 25 percent solution of (bayleton) in the amount of 0.6 kilograms per hectare or a 5 percent solution of (bayleton) applied in the amount of 3 kilograms per hectare. Powdered sulfur is also being dusted at a rate of 15 kilograms per hectare.

Application of chemicals is being performed with strict adherence to safety procedures and regulations.

MAJOR CROP PROGRESS AND WEATHER REPORTS

WINTER BARLEY HARVEST IN THE CRIMEA

Kiev SILSKI VISTI in Ukrainian 3 Jul 86 p 1

[Article by V. Kovalenko, Crimean Oblast: "Combines and Stubble Mulchers in the Field: Harvesting Begins Smoothly in Leninskiy Rayon"]

[Text] The hot Crimean sun is warming the fields. Winter barley is maturing particularly rapidly in this weather. There is not a moment to lose, and farm equipment operators have hastened into the fields.

In Leninskiy Rayon, the fields of which spread out over the Kerch Peninsula, winter barley was oversown, and it has matured in a nonuniform manner. The decision was made to spot-harvest, which under these conditions ensures high labor productivity.

Enterprises in Kirovskiy Rayon in the city of Kerch are supposed to send out 55 trucks and 12 tractors for harvest operations in Leninskiy Rayon. The chairman of the rayon agroindustrial association council twice went to the Kirovskiy Rayon executive committee and sent them several warning telegrams, but things are not moving. Only 15 trucks and 6 tractors have arrived in Leninskiy Rayon to date. As a consequence delays are occurring in threshing the windrows and in removing straw from the fields.

3024

CSO: 1811/38

MAJOR CROP PROGRESS AND WEATHER REPORTS

NATURAL GRASS ACREAGE NEGLECTED IN KIROVOGRAD OBLAST

Kiev SILSKI VISTI in Ukrainian 6 Aug 86 p 1

[Article, published under the rubric "Feed for Winter," by SILSKI VISTI correspondent M. Uspalenko, Kirovograd Oblast: "Mixed Grass Standing Too Long: Substantial Reserves of Natural Grasses Have Been Neglected on a Number of Farms in Aleksandrovskiy Rayon"]

[Excerpts] In the conditions prevailing this summer, particular importance in feed production is being attached to utilization of additional forage reserves. For example, a shortage of materials for producing haylage is being compensated for on a number of farms in Kirovograd Oblast with pea and barley straw, which is being put away together with alfalfa and mixed grasses. Following a fine tradition, workers from enterprises and organizations in urban communities have come to the aid of the village. In Aleksandrovskiy Rayon, for example, they have harvested more than 700 tons of natural grasses during mass Saturday and Sunday volunteer workdays. The bulk of these grasses has been used to put away combination haylage.

Wild grasses have been virtually ignored on the Iskra, Prohres, and Zorya komunizmu kolkhozes and on the Shlyakhom Lenina Sovkhoz, where there is considerable acreage in natural forage. On these farms, as on other farms in that rayon, as a consequence of inefficient utilization of pastures, haymeadows, and unutilized acreage, considerable perennial grasses had to be used for grazing stock. As a result farms in the rayon have put away less than half of the targeted quantity of hay, and they have prepared only somewhat more than 150 tons of grass meal for their own needs.

There is also complacency on farms which put away 65-75 percent of their hay needs with the first cutting. There are almost 240 hectares of natural haymeadows, pastures and unutilized land on the Kolkhoz imeni Kuybyshev. Livestock is not put out to graze here, however, with the result that cows alone are consuming daily 30 tons or more of forage.

Here and there, reports rayon agroindustrial association council chairman P. Yu. Bondar, the third and final cutting of perennial grasses is coming in. Notwithstanding, this year's shortfall per standard head of stock on the farms in this rayon will be approximately 11 quintals of feed units.

3024
CSO: 1811/38

MAJOR CROP PROGRESS AND WEATHER REPORTS

FIGHTING WEEDS IN UKRAINE

Kiev SILSKI VISTI in Ukrainian 15 Jul 86 p 1

[Unattributed article, published under the rubric "Timely Advice": "Stubble Mulcher Against Weeds"]

[Text] In connection with earlier -- in comparison with the average over a period of years -- harvesting of grain and pulse crops, as well as periodic rains, exceptionally favorable conditions have developed throughout the republic for intensifying the campaign against weeds, especially perennial weeds, within the framework of the fall-plowing system. As we know, in the latter half of the summer perennial weeds (sowthistle, stagger bush) accumulate in their roots a substantial quantity of reserve nutrients, which accelerates their propagation and causes increased spread of weeds.

In connection with this, UkSSR Gosagroprom and the Ukrainian Department of the All-Union Academy of Agricultural Sciences recommend the following:

after harvesting grain crops, all acreage should be worked over with IDG-10 or IDG-15 disk-type stubble mulchers to a depth of 6-8 centimeters;

after the sprouting of annual weeds and development of rosettes on perennial weeds, harrowing should be performed with BDT-7 disk harrows or deep-tillage cultivators to a depth of 10-12 centimeters;

fields with excessive density of perennial weeds should be additionally worked every 2-3 weeks with KPSH-9 deep-tillage cultivators to a depth of 12-14 centimeters.

Acreage worked in this manner should be plowed or deep-tillage cultivated to an appropriate depth at the end of September-beginning of October. This technique of fall plowing exhausts weeds' root system and reduces their numbers in the following year by a factor of two to three.

There should not be excessive use, however, especially on sloping land, of short-term fallow working, which includes spring plowing and subsequent cultivation, since this does not provide improvement in water conditions and promotes the development of water and wind erosion of the soil.

3024

CSO: 1811/38

LIVESTOCK AND FEED PROCUREMENT

UZBEK POULTRY INDUSTRY SHORTCOMINGS NOTED

Production Deficiencies

Tashkent EKONOMIKA I ZHIZN in Russian No 6, Jun 86 pp 62-64

Article by G. Korniltseva, candidate of biological sciences and senior scientific worker at UzNIINTI: "Weak Elements of Industrial Poultry Production"/

Text/ Let us begin by comparing the expenditures for obtaining eggs and broiler meat at leading specialized enterprises of USSR Goskomptitseprom (RSFSR, Lithuania, Belorussia, Ukraine and Kazakhstan) against the expenses of similar enterprises in Uzbekistan. In the case of the former, the production of 1,000 eggs requires only 2.5 man-hours and 150-170 kilograms of feed units for a production cost of 58 rubles and for the production of 1 quintal of broiler meat -- 8.7 man-hours and 270-300 kilograms of feed units for a production cost of 123 rubles. The profitability from production of eggs is 58.4 percent and of broiler meats is 43.9 percent. At enterprises of UzSSR Goskomptitseprom, the production of 1,000 eggs requires 4.2 man-hours and 268 kilograms of feed units (more by a factor of 1.5-1.8) and for the production of 1 quintal of poultry meat -- 24.5 man-hours and 690 kilograms of feed units (more by a factor of 2.3-2.5). The profitability is minus.

Such increases in all types of expenditures for the production of goods at poultry factories throughout the republic occur as a result of violations of the technology for the maintenance and feeding of poultry and insufficient control over the quality of the feed and the feed assortment. The production capabilities introduced into operations are being mastered very slowly and new equipment is not being used. The productivity of the poultry is low. The effectiveness and quality of the work being carried out by the republic's poultry production enterprises are not in keeping with the modern requirements.

There is a whole series of objective factors which are restraining the further development of production operations. More than 30 new poultry factories were placed in operation over the past few years and at 26 of them the construction organizations of UzSSR Minselstroy Ministry of Rural Construction/ and Uzkolkhozstroy tolerated serious violations of the technical conditions for the roofing of poultry houses. The thickness of the heating insulation was lower by a factor of two than that required and in some places it was lacking entirely. Steam insulation was not carried out, the areas where the roofing joined the parapets and ventilation shafts were not finished off, gable

asbestos-cement sheets were not installed and their overlapping was not maintained.

Today, 70 percent of the production capabilities at the Karakalpak, Dzhirgatal, Urgench, Balykchinskiy, Kamashi, Uychinskiy, Dzgharkurgan and Tashkent broiler factories and also at the Tselinnik Poultry Factory in Syr-Darya Oblast are not being used as a result of low quality installation of construction structures and roofing and violations of the plan for equipment installation and annually these installations are falling short in the meat they supply by 16,000 tons. At 20 of 67 poultry factories, where crude deviations were noted in the plans for the roofing of poultry houses, the poultry losses amounted to 60 percent of overall losses at all farms.

During the 11th Five-Year Plan, the contractual organizations engaged in the construction of poultry production installations did not complete the construction or placing in operation of auxiliary-subsidiary installations and engineering lines of communications. Almost one half of the poultry factories do not have boilers or heat in the production departments, more than 60 percent -- slaughtering departments, 48 -- fecal-purification installations and 24 percent -- lack a reserve electric power supply.

The absence of boilers led to a situation wherein 31 poultry factories, over a period of five autumn-winter months, were deprived of the opportunity of raising young stock for meat purposes or for reproduction of the herd. During the winter months of 1984-1985 alone, 41,000 tons of liquid fuel in excess of the norm were consumed for the purpose of maintaining a normal temperature in the production departments.

Solutions for the problems of heat supply are being held up by the slow conversion of heat generators over to natural gas and this in turn is the result of delays in the preparation of planning documentation by the UzNIPISelstroy and Uzagiprogaiz institutes.

One serious shortcoming in the construction of poultry production facilities is the use of plans suitable for the central zone. Yet today we lack our own plans, developed taking into account our extreme climatic conditions.

A scourge of the branch is the fact that poultry losses are occurring at many poultry factories as a result of violations of the elementary sanitary rules for operations and for preparing the departments for receiving new batches of poultry.

The experience of poultry factories in Moscow Oblast reveals that on farms having more than 300,000 head of poultry the individual production zones must be located at distances of 200 meters from one another and the poultry houses in each zone -- 20 meters from one another. When more than 100,000 head of poultry are being maintained in a poultry house, the external air can be contaminated by pathogenic microflora within a radius of 30 meters. Quite often, infection is brought in during operation of a ventilation system during windy weather. Contact between old poultry and young stock, mainly through a contaminated air basin, promotes the spread of diseases.

The situation in Uzbekistan is complicated by the fact that the factories do not have efficient air conditioners or fans and they lack a scientifically sound technology for the feeding, maintenance and raising of poultry, with the republic's sharp continental climate being taken into account.

At the present time, a method of group prophylaxis for diseases has been developed and introduced into operational practice with the aid of vaccines employed in the form of aerosols. On all of the poultry production farms, a check must be organized on the immunity of poultry through a study of blood serum for the presence of specific antibodies. The vaccines employed, in combination with veterinary-sanitary measures, result in the sanitation of unfavorable farms. The extensive use by the farms of a vaccine against Marek's disease ensures a high economic savings -- from 212 to 580 rubles per 1,000 head of annual poultry turnover.

Antibiotics in the form of aerosols have been tested for the prevention and treatment of respiratory diseases. With the use of terramycin, streptomycin, norsulfazole and furazolidon in the form of aerosols, during the raising of chicks from day-old to 60 days of age, improvements were noted in the metabolic processes, their preservation was raised by 2.7 percent and their yield by 4.1 percent.

Considerable economic damage was caused by colibacteriosis. For its prevention and for the prevention of a complex of respiratory diseases, the use of fradycin, spectam and new preparations of the nitrofurantoin type was recommended. When used for curative-therapeutic purposes, their economic effect per 1,000 head amounted to 1.63-8.79 rubles per ruble of expenditure.

Production tests were carried out on anti-coccid preparations. The economic effect realized from the use of form-coccid on 2,900 broilers amounted to 721,000 rubles.

Feed plays a principal role in the production of poultry products. The feed is produced and supplied by the mixed feed industry of UzSSR Minkhleboproduktov /Ministry of Grain Products/. In the majority of instances, the mixed feed does not meet the requirements set forth in the GOST /state standard/ and it does not satisfy fully the needs of a poultry organism, especially for protein, calcium and phosphorus.

As a result of the absence of raw materials or freight cars for the mixed feed, the enterprises of UzSSR Minkhleboproduktov are failing to supply feed on a regular basis to the poultry factories and in the assortment needed. As a result, the poultry are being fed on an untimely basis and not in accordance with the accepted recipes.

Considerable violations are occurring in the feeding of broilers. The cost of the feed accounts for 70-75 percent of the cost of 1 kilogram of broiler meat. Intensive industrial meat production must be predicated upon a strong feed base.

The mixed feed industry of Uzbekistan supplies feed which does not meet the state standards. The inadequate protein content (instead of 23 percent crude

protein for chicks from 1 to 4 weeks of age, the feed mixtures contain 18-19 and instead of 18-20 for 5-8 week old chicks -- 14-16) leads to a reduction in the average daily weight increases.

Very interesting experience in the feeding of agricultural poultry has been accumulated in Hungary and Bulgaria. At the Babolna Goskhoz /state farm/ (Hungary), all feed undergoes bacteriological testing and is checked for its nutritional value. There are three mixed feed plants at the goskhoz and they produce 25,000 tons of feed annually.

In Bulgaria, the enterprises of the mixed feed industry are subordinate to the country's National Agroindustrial Union. It has 34 mixed feed plants at its disposal. The productivity of the largest plants, for example the one at Tolbukhino, is 1,500 tons of mixed feed daily. The plants have laboratories for determining the quality of the feed. For the purpose of objectivity in carrying out their evaluations, they have been subordinated to the plants. The mixed feed recipes are computed in a computer center, with the available raw material resources being taken into account.

Goskomptitseprom, jointly with UzSSR Gosagroprom, is carrying out purposeful work for the purpose of intensifying control over the utilization of raw material resources and improving the quality of the feed being produced and rhythmic deliveries and efficient use of the feed.

Goskomptitseprom has developed measures and has established and assigned tasks to each poultry factory for the production of vitamin grass and meat-and-bone meal, materials needed for balancing the recipes while taking into account the production purpose, age and productivity of the poultry. The enterprises of Goskomptitseprom have been assigned more than 25,000 hectares of land, of which amount approximately 7,900 hectares -- arable land under irrigation. Using their own resources, they produced 15,000 tons of vitamin-grass meal against a requirement calling for 45,000 tons. In the future, with further development of the branch, 70,000 tons will be produced. In this regard, a problem will arise in connection with the land: 13,000 additional hectares of arable land will have to be allocated.

There is still another weak link in the work being carried out by the UzSSR Goskomptitseprom -- selection-breeding work. The organization and carrying out of breeding work with poultry serves as the foundation for achieving qualitative and quantitative improvements in industrial poultry production.

A network of breeding farms has been created throughout the republic: state poultry breeding plants, reproducers of the 1st and 2d order and parental herds of industrial poultry factories.

For the future, a program has been approved for strengthening the relationships between pedigree and commodity farms engaged in the production of hybrid poultry. A definite amount of work is being carried out in connection with increasing the capabilities of egg and poultry meat pedigree farms and modernizing reproducers of the 1st order.

Nevertheless, the indicators for egg and especially broiler poultry factories are still very low. The republic still suffers from a shortage of incubation eggs, since we first of all built and placed in operation commodity enterprises.

It was not until later that we built pedigree enterprises. An insufficient number of breeding plants, breeding reproducers of the 1st and 2d order and also the absence of parental herds at many enterprises of UzSSR Goskomptitseprom have resulted in considerable expenses and losses have been especially noticeable in broiler production.

Strict observance of the rules for the breeding and raising of 4-strain hybrids in the RSFSR, Belorussia, Latvia, Lithuania and the Ukraine is producing fine economic results. The Vilnyus Poultry Factory alone supplies 7,500 tons of poultry annually. A poultry house here produces 135 kilograms of meat per square meter -- more by a factor of 10 than the amount being produced at the republic's best enterprise. In Uzbekistan today, the live weight of broilers does not exceed 860 grams when they are 72 days old and yet at the Vilnyus Poultry Factory the live weight of the broilers reaches 1,800 grams when they are 57 days old.

For more efficient organization of breeding work and for further improvements in breeding work in each oblast, future plans call for the creation of poultry breeding reproducers of the 2d order for egg and poultry meat specialization.

The 27th Party Congress emphasized once again the importance being attached to solving the Food Program, particularly in the matter of supplying the country with meat products. It is precisely poultry production that will furnish assistance in accelerating a solution for this important task. UzSSR Goskomptitseprom must eliminate as rapidly as possible the existing shortcomings, the most important of which are the weak scientific base, the lack of balance in feed production and failure of the standard plans to conform to the specific conditions found in the republic. The achievements of foreign and domestic poultry factories must be introduced into operations in a more bold and more extensive manner. We possess the potential for annually raising 1.464 billion laying hens and 140 million broilers and this is in keeping with the tasks assigned to the republic.

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Remedial Measures

Tashkent SELSKOYE KHOZYAYSTVO UZBEKISTANA in Russian No 4, Apr 86 pp 10-12

[Article by B. Piskunov, chairman of UzSSR Goskomptitseprom: "Problems of and Methods for Developing Industrial Poultry Production"/

[Text] In carrying out the decisions handed down during the 27th Party Congress and the April and October (1985) plenums of the CPSU Central Committee, the republic's Gosptitseprom collective began implementing the party's strategic program aimed at accelerating socio-economic development. Its most important element is implementation of the Food Program. Poultry production plays an important role in carrying out this program. During the last five-year plan alone, capabilities were placed in operation at specialized farms for the raising of 36.4 million broilers and 1.4 million industrial and pedigree laying hens. A number of poultry production enterprises underwent radical modernization and technical re-equipping. The capital-labor and power-worker

ratios were raised considerably. Large-scale measures were carried out in connection with the all-round mechanization and automation of labor-consuming processes and a network of breeding plants and reproduction farms was created taking into account scientific achievements and practical experience.

In the interest of further developing industrial poultry production and achieving stable rates of growth in the production and procurement of products, Uzpitiseptrom was transformed into the Uzbek SSR State Committee for Industrial Poultry Production. This measure has fully proven its worth. A real foundation has been created for improving planning, financing and logistical supply for the branch and for efficiently solving the problems with the processing and trade organizations.

Guided by the directives handed down during the 16th and 19th plenums of the Central Committee of the Communist Party of Uzbekistan, the Board of Goskomptitseptrom raised its exactingness with regard to personnel work. A great amount of attention is being given to personnel training and retraining and to raising professional expertise. In 1985 alone, more than 60 percent of the directors and chief specialists of poultry factories became acquainted with the leading technology being employed in the production of poultry meat and eggs at the best enterprises in Omsk, Tyumen, Urenburg oblasts and in Krasnoyarsk Krai. More than 10 percent of the workers improved their skills as a result of having undertaken various training courses. Having summarized the experience of leading poultry factories throughout the country and the republic, recommendations were developed and published by Goskomptitseptrom, in both the Russian and Uzbek languages, for the raising of young replacement chickens for meat and egg specialization, for the incubation of eggs of agricultural poultry and a number of others. They were all distributed to the enterprises where they are now being used in practical work.

The veterinary specialists developed similar instructions and directions for preventing various poultry diseases from occurring at large industrial poultry production complexes. At each enterprise, they became an indispensable part of the technological process employed in the production of poultry eggs and meat.

The overwhelming majority of poultry production enterprises have accumulated experience in the efficient management of production operations and they have developed strong cadres of specialists and workers in the mass professions, individuals who are capable of introducing scientific-technical progress into operations in a persistent and purposeful manner and of making maximum use of the logistical base.

In the interest of improving control over production management at the enterprises, production associations were created using leading enterprises. This included 16 farms of the Kara-Kalpak ASSR and Andizhan, Dzhiark, Kashka-Darya, Samarkand, Fergana and Tashkent oblasts. This took place with no increase in the overall size of the administrative staff. But the chief gain derived from the fact that an opportunity presented itself for satisfying the requirements of the poultry factories for incubation eggs by means of the pedigree poultry reproducers of the 2d order included in the structure of the associations. By optimizing the parental herds at the poultry factories, it became possible to increase their capabilities by 12-15 percent. All of this made it possible to increase the production of goods.

During the five-year plan, poultry meat production in the republic's public sector increased by 66 percent and eggs -- by 17 percent. Moreover, almost nine tenths of its volume was produced at enterprises of UzSSR Goskomptitseprom.

During 1985 alone, the numbers of adult poultry at poultry factories increased by 9.8 percent compared to 1984. The preservation of the young stock increased by 5.4 percent. As a result, 126 million more eggs and almost 11,000 more tons of poultry meat were produced. The overall value of the products obtained increased by 26.4 percent. Roughly 8,260 rubles, or 1,085 more rubles than in 1984, were obtained per average annual worker. The average annual wage for workers increased by 8.7 percent.

The collectives of the poultry production enterprises achieved many successes. Thus the level of utilization of capabilities exceeded 98 percent at the Production Association imeni Ilich in Tashkent Oblast. Here the 1985 program for the production of poultry meat was fulfilled by 174.6 percent and that for eggs -- by 120 percent. In the process, the collective realized a savings in mixed feed of more than 7,000 tons. Compared to 1984, the egg production by laying hens increased on the average by 5 eggs. The brigade contract, which is presently being used by 25 percent of the brigades, has been introduced into use in the departments of this association for the very first time in our system. During the current five-year plan, all of the brigades will convert over to this progressive method.

A number of poultry production enterprises have increased sharply their production of goods. For example, compared to 1984 the broiler poultry factories Chimionskaya in Fergana, Uychinskaya in Namangan and imeni XXVI Partsyezda in Tashkent Oblast have increased their meat production by a factor of 2-2.5. During this same period, egg production increased at the poultry factories imeni Kirov in Andizhan Oblast by a factor of 3.4, at Gizhduvanskaya in Bukhara Oblast -- by a factor of 2.7 and at the Gulistanskaya Poultry Factory in Syr-Darya Oblast -- by a factor of 2.6. Poultry productivity increased sharply at the Sovkhoz imeni Timiryazev in Dzhizak Oblast. Over a period of a number of years, the farm had been unable to cope with its planned indicators. Last year, the plan for egg production was fulfilled by 172.2 percent and that for meat -- by 127 percent. Compared to 1984, egg production increased by 34 percent, meat -- by 43 percent and the preservation of young poultry stock -- by 27 percent. The average egg production of laying hens increased by 18.5 eggs and the average weight of slaughtered broilers -- by 160 grams.

In critically evaluating the results achieved, we necessarily note that the opportunities embodied in branch intensification are not being utilized adequately. Some poultry factories failed to fulfill their 1985 plans for egg production. And the most important task consists of raising sharply the production indicators of backward enterprises and of raising them to the level of leading farms.

During the 12th Five-Year Plan, we must increase the average annual production of eggs by 42.9 percent and poultry meat -- by 89 percent compared to the 11th Five-Year Plan.

In the interest of raising production efficiency and achieving maximum utilization of productive capital, we intend to carry out the modernization and technical re-equipping of existing enterprises. This is needed. At poultry factories which were introduced into operations in the 1960's and 1970's, the heating, water supply and sewerage systems have become worn out and the technological equipment has become antiquated. This is creating great difficulties with regard to implementing progressive technologies, carrying out organizational-technical measures and using more productive equipment.

The tasks advanced by the Central Committee of the Communist Party of Uzbekistan for the technical re-equipping of production have forced us into employing a new approach for the formation of our capital investment plan. In 1986, almost 35 percent of the overall volume of capital investments allocated for production installations is being ear-marked for the modernization of enterprises and by the end of the five-year plan we will have raised this figure to 50 percent, compared to 9-11 percent during the past five-year plan.

For the effective use of the resources allocated for modernization, a republic repair-construction trust with subunits in Bukhara, Kashka-Darya, Samarkand, Tashkent, Fergana and Khorezm oblasts has been created attached to Goskomptitseprom. Its production program is closely linked to the technological process employed by the poultry factories. This will make it possible to carry out the modernization and technical re-equipping of enterprises without having to disrupt the production cycle or lower the production of goods. Computations have shown that the modernization of existing poultry factories will make it possible to obtain additionally approximately 60 million eggs and 5,000 tons of dietetic meat.

One of the most important tasks which we must solve is that of protecting the poultry, especially chicks. Last year, owing to above-plan losses in young stock, more than 7,000 tons of meat were lost.

We are undertaking energetic measures and we are stiffening the requirements being imposed upon those workers and specialists who are not observing the established technology and veterinary rules. Goskomptitseprom, in a special order, assigned members of the board to each poultry factory and also administration and department chiefs and leading specialists. Their mission -- to furnish practical assistance in developing and implementing measures for strengthening the campaign against poultry diseases and improving the preservation of young stock. The specialists deliver reports at each meeting of the board.

We must not ignore the fact that last year 85 percent of the young stock perished as a result of non-infectious diseases. Actually, during the fifth Five-Year Plan, almost 90 percent of the poultry factories were placed in operation containing considerable defects. Thus the absence of thermal insulation led to unacceptable low temperatures in the poultry houses during the autumn-winter period and poor quality installation of ventilation equipment resulted in extremely high temperatures during the summer. This resulted in low preservation of the young stock. It is sufficient to state that more than 60 percent of the overall losses occurred at 20 of the 70 poultry factories where especially crude deviations were noted in the plans when carrying out roofing work.

Last year alone, owing to an inadequate campaign being waged against infectious diseases, 15 percent of the young stock perished. Beyond any doubt, a large part of the guilt rests with the zooveterinary workers at the poultry factories, who failed to carry out their veterinary-prophylactic and sanitary measures in a timely manner. But the chief problem had to do with the fact that Uzglavzoovetsnab did not satisfy the requirements of the poultry factories for the needed medicines.

Thus, last year the requests for sulfadimezin were satisfied by 5.9 percent, levomycetin -- by 9.7 percent, lime chloride -- by 38.8 percent and turpentine -- by 27.3 percent. Under such circumstances, it is impossible to carry out normal curative-preventive and sanitary measures.

A chief reserve for increasing output is that of improving feed production and raising the quality of the feed. The concentrated feeds presently being supplied to the poultry factories are not balanced in terms of the principal nutrients and thus the planned productivity of the poultry cannot be achieved. In addition, excessive expenditures of forage ensue. Last year, mainly owing to this reason, the average egg production per laying hen turned out to be lower than the figure planned by 9 eggs and on the whole more than 74 million eggs were lost.

Serious concern is being aroused over the fact that enterprises of the mixed feed industry are experiencing difficulty in meeting the requirements of the poultry factories today and this problem is expected to become even worse tomorrow. The situation is further aggravated by the fact that many enterprises are deprived of the opportunity of producing their own feed in adequate quantities. For example, of 8,785 hectares of arable land assigned to the poultry factories, only 1,723 hectares, or 19.6 percent, have a guaranteed water supply.

UzSSR Minvodkhoz /Ministry of Land Reclamation and Water Resources/, which in 1983-1985 was tasked with developing and placing in operation 3,400 hectares of land, has fulfilled this task by only 34.5 percent. As a result, some poultry factories are obtaining low fodder yields following alfalfa sowings on waterless lands. Against a requirement calling for 60,000 tons of vitamin meal, only slightly more than 8,000 tons are being produced.

Effective measures are being undertaken on the farms for the production of deficit protein and vitamin feeds -- raising the fertility of irrigated arable land, strict observance of the technology for drying perennial grass fodder and utilizing the waste scraps of incubation and slaughtering departments. Great prospects lie in store for the large broiler enterprises, especially those which in 1986 organize the complete evisceration of carcasses. In short, many unresolved problems still remain in feed production and they must command the attention of the Ministry of Grain Products, Goskomptitseprom, other ministries of the republic's agroindustrial complex and the planning organizations.

The collective is convinced that solutions for these vital problems will make it possible to solve more completely the tasks of the country's Food Program.

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CSO: 1824/462

POLICY, ORGANIZATION

VIEWS ON LEGITIMIZING 'PRIVATE' SERVICES SECTOR EXPRESSED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 24 Aug 86 p 3

[Interview with Geliy Ivanovich Shmelev, sector chief, Institute for the Economics of the World Socialist System, by L. Telen: "Handicraftsmen Against the Shabashniki [unofficial, high-priced workers]; for earlier article on this subject see JPRS-UCG-86-010, 13 Aug 1986, pp 14-44]

[Text] [Question] I remember about 15 years ago there was a shoemaker's stall at the Dynamo Station of the Metro. We affectionately called him Uncle Koley. If you gave him a pair of broken "spikes" you knew well that they would be repaired quickly and properly. Koley's stall has long been gone, along with hundreds of similar ones, scattered throughout Moscow. Old clothes dealers, milk deliverers, knife sharpeners and hat makers are gradually disappearing from our lives. They meekly retreated before the service industry. Suddenly, they have our attention again. The Political Report of the CPSU Central Committee to the 27th Party Congress presented the task of developing individual labor activity, including the service sphere. What is the explanation for this attention?.

[Answer] Above all, the state of our service sphere. Haven't we grown used to discussing it? A multistoried services building is built, and a hairdressers or 100-seat restaurant is opened -- everything is in order. But this is mistaken. Will you start sending your laundry to a cleaners if it is a half hour drive from home? Or, perhaps, drive throughout the city looking for a paper recycling center. And, as you know, there are types of services which the service industry has completely ignored. They are not large enough and there is not enough demand, but there is demand! For example, you need to put a vent in a window. Where do you go? I am not talking about such "refined" services as translations, drafting, literary editing. Today people's needs for services are hardly half met.

[Question] Is the solution for services, and even trade to be based upon small enterprises, cafes, small stores and shops? However, this is not advantageous to the state. Planning, supply and transportation are all designed for large enterprises.

[Answer] This is not the first time we have been faced with the choice -- either develop the industrial sphere of services through the state's efforts

or shift it back to private initiative. At the end of the 1970's this question arose simultaneously in practically all the socialist countries. Most of them decided to solve it primarily by expanding individual labor activities.

I recall a trip to the German Democratic Republic. There was a small sausage shop in an old section of Berlin. I got acquainted with the owner, who, with evident pleasure, invited me to the store, and later "behind the counter" -- where the sausages are made. For 20 years he had been feeding inhabitants of the section. Customers not only know his face, but also his name. He knows how much of what specific customers will buy and how much sausage will be sold on a given day. There is a large assortment at the store, where his wife is standing behind the counter. In addition to the usual varieties, there are those made by his own recipe. They are his pride, and the secret of his "fire", which he wants to pass on to his son.

[Question] But is such initiative advantageous to the state?

[Answer] The development of small enterprises -- artists, cooperatives and family ones -- does not require capital investments by the state. Labor power is usually not withdrawn from large production operations: Irons can be repaired or freight hauled after regular jobs or on days off. Such services can also enlist into socially useful activities those who, by reason of circumstances, were previously not so involved -- pensioners, housewives, students.

[Question] Geliy Ivanovich, every country has its peculiarities, its historically evolved economic system. In the German Democratic Republic since the 1950s individual handicraft workers have played a considerable role in the economy. Skills and traditions are passed from one generation to the next, and thus there is no question about whether or not to promote individual initiative in the service sphere. We practically have to start from zero.

[Answer] Is this so? Do we really have nobody entrepreneurial in the service sphere? Just once, go to them for help -- a dressmaker working at home, a "volontyerk" to build a house, or a "levak" (worker who willingly sells service or product) to haul you in his car. One pays three times as much, and says "thank you", no matter what the price. However, our "muzhniki" (private-sector workers), as a rule, operate semi-legally. Their prices are exorbitant, there are no guarantees at all and nobody knows where the scarce materials come from. In addition, the state does not obtain even half a kopeck from them.

[Question] However, individual labor activity is legal in our country, but "volontyerk" and crafts workers don't rush to get out from the "backyard".

[Answer] Did you know that with the exception of the handicrafts trade, it is mainly pensioners and handicapped people who are engaged in individual labor activities? That is why the number of officially registered household workers here is very small -- hardly more than 40,000 in the entire country. There are still restrictions on types of this activity.

[Question] Do you propose removing restrictions on any types of activities?

[Answer] Of course not. The state has the right, and, what is more, the obligation, to purposefully determine which occupations should be involved in individual labor activities. This occurs in all socialist countries, where they are regulated by economic methods. In the GDR there are special incentives for this type of activity in food service; in Hungary in the "intellectual labor" sphere. There are private operations for drafting blueprints, translating, writing computer programs and even arranging marriages. All this is legal, acknowledged and under the control of the state.

[Question] Nevertheless, one cannot turn over the entire service sphere to the control of "chastniki". State enterprises should continue to render most services. Can it be otherwise? Using their own money are such individuals capable of equipping and servicing a modern dry cleaning plant. Or, are they capable of organizing the guaranteed repair of quite complicated household appliances?

Private services do not and cannot replace state services. The former only supplement the latter, above all in those areas where it is simply not profitable to create large enterprises. This is true for practically all European socialist countries. In addition, the development of individual labor activity is "drawn" to the social service sphere.

[Question] All the same, the policies of each country towards private initiative in the service sphere have their own features...

[Answer] True. The differences here are very substantial. Take just the material base for such services. Anybody who has been to the GDR notes that all sorts of shops and stores are located, as a rule, in the ground floors of private houses. Living space occupies a minimal area and the shopkeepers' families, while they are not exactly crammed into corners, do not permit themselves any extra room. "It is required by the business", a German master craftsman told me. They thoughtfully and tastefully arrange their houses for culinary work and sausage making, repairing sewing machines or typewriters. And it should be noted that this is not at the expense of the state, but with their own hard earned money.

In Hungary and some other countries, having decided to activate personal initiative in public feeding and in trade, they have started to rent small, previously unprofitable cafes, bars and shops. Rents are not low. A lot of good work is required to make money.

While in the GDR, work in a private shop is usually considered one's main job, in Hungary such shopkeepers most often also have jobs in the public sector.

[Question] Even a small shop or cafe requires more than one person. Does this mean that it is necessary to hire assistants?

[Answer] Not always. In Czechoslovakia, for example, only close relatives can work together with the owner. In Hungary and the GDR not only can they keep apprentices, they can also hire workers.

[Question] What about cooperatives? In my view, they can also provide a diversity of services with assured quality. What is too much for one can be handled by a collective of people with similar intentions. It not only combines monetary savings, but also knowledge, skill and initiative.

[Answer] I agree with you. After, all, there are nations where cooperatives are successfully working among our friends. It would be worthwhile to learn from them. Five years ago in Hungary it was decided to create small artels in various areas of the national economy. The simplicity of organization and financial reports immediately drew attention to them. In recent years the number of small cooperatives has increased five fold.

Recently the CPSU Politburo examined the creation of such cooperatives in our country. It is a very timely and farsighted decision. I am confident that in developing such artels in the service sphere, we will not only improve service, but also dig the ground out from under the feet of wheeler dealers, who have learned how to illegally profit from scarcities.

[Question] All this diverse activity still must be controlled. In my view, without strict state accounting and control nothing will come from the development of individual labor activities.

[Answer] Undoubtedly. Take, for example, the raw materials problem. Where does it come from, what is its quality and price? All these must remain outside the attention of controlling organs. Experience shows that it is not too difficult to provide such control. It would be sufficient to include handicraft workers within the state supply system on a contractual basis.

Here is another problem -- the quality of services and production. Can they be kept under control. Take one example. Private opticians in the GDR work under license. Do you need glasses? You simply turn to one such person. You have no prescription? Again, nothing to fear. The owner is not only an optician, but also a specialist with a diploma and will have no difficulty in selecting your glasses. Here is the procedure: only those masters who not only want to, but are also professionally qualified, can serve the public.

Prices are also under state control. In some countries they are strictly set "from above", in some they are approved, while in others only "ceilings" are set, and prices above them are collected for the public sector.

[Question] Probably the most important question is control of incomes. How can it be assured.

[Answer] In Czechoslovakia licenses for individual labor activity are given by national committees -- local organs of power. Crafts workers are obligated to periodically show their receipts and accounts books. These documents are carefully inspected. Net incomes are taxed. If they are below a certain level then the private worker is exempted from taxes. If they are equal to the average earnings of a worker in the public sector, then the private worker pays as much as a state employee. If they exceed this level then they are

taxed progressively. It should also be noted that the income taxes are not the same everywhere.

[Question] The experience is really diverse. What path should we take and what example should we follow?

[Answer] I think that it would be unsatisfactory to exactly copy the experience of some other country. However, it is necessary to develop general principles which take this experience into account. Financial tools should function so that the labor of crafts workers and shopkeepers would be useful to us and profitable to the state and to these people themselves.

[Question] All right, assume that the measures which we are discussing have been implemented. Are they sufficient to promote interest in individual labor activities in our country?

[Answer] Perhaps not. It is also necessary to examine the social policies of those who do such work. They should obtain the same rights as industrial workers: paid vacations, health insurance, pensions, subsidized trips, perhaps even bonuses. For example, in order to stimulate bread baking in nonstate bakeries, the GDR Government pays their bakers twice a year.

[Question] In other words, those engaged in individual labor activities should be included in the system of socialist social relations and feel themselves to be equals among equals?

[Answer] And why not? Otherwise there will be no change in the solidly rooted opinion that such activity is inferior, or worse, socially harmful. If, boldly and systematically, with a knowledge of experience accumulated, we develop well organized individual labor activities, then society and each of us will benefit. And there will be less fear of the new, more initiative, energy and entrepreneurial abilities where people and their needs and demands are involved.

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CSO: 1827/155

POLICY, ORGANIZATION

KLYUYEV DISCUSSES RESTRUCTURING OF LIGHT INDUSTRY SECTOR

Source: EKONOMICHESKAYA GAZETA in Russian No 36, Sep 36 p 3

[Interview with USSR Minister of Light Industry V. G. Klyuyev, by EKONOMICHESKAYA GAZETA: "Light Industry: A Mechanism for Accelerated Development"; date and place not specified]

[Text] The labor collectives of the light industry enterprises have been called upon to play an important role in solving the social problems presented by the 27th CPSU Congress. The June (1986) Plenum of the CPSU Central Committee spoke of the acute nature of the question of providing the people with consumer goods.

At the present time, specific measures are being developed for the in-depth reorganization of the economic management mechanism in this sector. These are provided by the resolution of the CPSU Central Committee and the USSR Council of Ministers entitled "On Improving the Planning, Economic Stimulation and Development of Management of Consumer Goods Production in Light Industry."

USSR Minister of Light Industry V. G. Klyuyev tells of the means and directions of reorganization at the request of this weekly journal.

The readers of EKONOMICHESKAYA GAZETA have had the opportunity of gaining an understanding of the scope and depth of reorganization of the economic management mechanism in the sector, since they received the complete text of the resolution (EU No 10). The workers of our ministry were awaiting this resolution and have received it with great satisfaction. A broad field of activity is opening up before our labor collectives and all our managers and specialists. There are great opportunities for showing creative initiative in the matter of improving the quality and expanding the assortment of goods for the people.

[Question] Initiative and socialist enterprise may become powerful factors in our enterprises if they are organically intertwined into the fabric of mutual economic ties and themselves become economic categories to some degree...

[Answer] What hinders initiative? First of all, of course, it is the petty bureaucracy of the enterprises on the part of the higher organizations, against which our party has spoken out so sharply. This is true in full measure also for the work of the USSR Minlegprom [Ministry of Light Industry] as well as for the union republic ministries. And what is it that frees initiative? Of

course, it is broad economic independence and the development of true cost accounting. This is the main reason for the reorganization.

We must note that the adopted resolution considers the critical comments, proposals and remarks of delegates to the 27th CPSU Congress, as well as the experience of operation of the enterprises under conditions of the large-scale experiment, the new methods of economic management which are being tested at the Sumy Machine Building Scientific-Production Association imeni M. V. Frunze and at the "AvtoVAZ", and also the comments of specialists and journalists published in the newspapers.

Thus, the program of reorganization has taken on all the newest ideas and leading experience, and must ensure the accelerated development of the sector. It touches upon all aspects of the life activity of the labor collectives and the entire system of management of the sector. Moreover, the outlined measures go beyond the sectorial boundaries, encompassing the reorganization of the mutual relations of our enterprises with trade and with the enterprises of adjoining sectors.

For example, the light industry enterprises have been allowed to deduct for associated enterprises and trade organizations part of the funds realized from the sale of new improved quality goods. Such a measure will undoubtedly facilitate strengthening the alliance between all who participate in providing goods for the population.

The significant changes which will be implemented in the sphere of goods production planning are primarily directed toward encouraging in every way possible the development of initiative and enterprise. For this purpose, the number of indicators ratified in a centralized order has been sharply reduced.

In order to give greatest possible consideration to the interests of individual groups of the population, the product production plans in their natural expression will define the volumes of goods to be produced for children, the youth, and the aged.

The change in the system of indicators is augmented by strengthening the economic methods of management due to a sharp increase in the role of profit. It becomes the primary plan indicator and the source of satisfaction of production and social needs and requirements for the development of enterprises. There is also a change in the system of profit distribution, in budget accounting, and in the order of formulating economic incentive funds.

[Question] It is no secret that the production of goods in light industry by far does not always consider the market conditions. Why does this occur, and what measures can help to overcome the gap between supply and demand?

[Answer] Yes, it is true, there is still such a gap, which was formed at a time when the capacities of the buyers have been expanded.

The results for 1985 show that enterprises and associations in light industry still produce considerable volumes of goods which deviate from the ordered assortment, which are of low quality, or which do not correspond to the direction

of fashion and demand. Many of these goods are in short supply in industry and trade. This also is an evidence of the shortcomings in supplying demand on the part of the trade organizations.

It is true that this year the situation has improved somewhat with the responsibilities for the delivery of products in accordance with contract agreements. However, in 7 months the consumers have been undersupplied among in the amount of over half a billion rubles. At the same time, we must also mention the fact that the demands by light industry on its associated enterprises do not always receive a positive response. This is primarily true in the deliveries of raw goods and materials in the necessary assortment.

The divergence between supply and demand is evidence of the weak effect of wholesale trade fairs on production. Often also the trade fair assortments significantly differ from the series produced goods. This can be explained sufficiently also by the fact that wholesale trade fairs on the sale of raw goods and materials have not been held. The product suppliers were not always the same, and with random change in suppliers it is difficult to build production at the level of the order--to manufacture goods which fully correspond to the sample products.

This situation must be radically altered. The main task for the production plans becomes not the method "of that achieved," but commercial order and results of wholesale trade fairs. Including goods for which there are no groups in the output plan is prohibited.

Based on the agreements concluded for the delivery of products, the enterprises determine the annual volume of deliveries in retail prices and report this data to the higher organizations. Fulfilling responsibilities in the delivery of products in accordance with the agreements becomes one of the most important indicators in evaluating the economic management activity and in summarizing the results of socialist competition.

Thus, wholesale trade fairs and the contract agreements concluded at these fairs become the basis for planning the assortment and evaluating the consumer need for the goods. This increases their role in orienting production toward demand and changes the character of the trade fairs themselves. With the condition of ensuring deliveries for all-union and republic needs, the associations and enterprises receive the right of free sale of the goods. At the same time, the trade enterprises may freely select their suppliers. At trade fairs for the sale of textile goods, enterprises which produce fabrics have their exclusive buying rights.

Our enterprises have been given the right to sell at their own discretion the above-plan production which is in demand primarily within the limits of their oblast or kray. At their discretion, the enterprises may sell goods which have not been selected by the consumers within a month, or goods which the purchaser has refused to other trade organizations.

In order to orient the production plans toward the more complete satisfaction of public demand, direct long-term economic ties will be established between light industry enterprises and the enterprises of associated sectors and trade

organizations. Already by 1987, the changeover of large production associations and enterprises in light industry to direct long-term economic ties must be largely completed.

A series of other measures is also directed at satisfying demand. Specifically, already in the current five-year plan, company trade will undergo comprehensive development within the sector, and will become the center for study of demand and formulation of style and taste of the Soviet people. From the additional profit realized from the sale of company goods, we will be able to increase the economic interest of the collectives in developing the production of high-quality, high fashion products on an ever larger scale.

At the present time, there are 115 company stores operating in the sector. By the end of the five-year plan there will be 200-250. But the question, obviously, is not only in quantity. The main thing is that these stores be specifically company brand-name stores and trade in goods of specifically those enterprises which they represent.

There is currently a reorientation in the activity of the All-Union Institute on the Assortment of Products in Light Industry and Clothing Culture. It will become the base organization, answering for the development of fashion, assortment and introduction into production of new and promising goods in light industry.

Modelling houses will also take on a new quality. We are handing over small enterprises to them for the experimental production and manufacture of products in small series, with the mandatory sale of these products in their own company stores. These complexes (modelling house--experimental production--company store) must function on terms of full cost accounting and develop at the expense of funds from the increasing introduction of the new developments into mass production.

[Question] The resolution speaks of the necessity of increasing the flexibility of retail prices. How will the mechanism of price formation work with this?

[Answer] This measure is provided as a stimulus for renewing the production of light industry goods, for the output of high quality products, and for reacting more efficiently to demand.

Goods which are especially popular may be sold at the contract prices set between the enterprises and the trade organizations. Part of the funds obtained from the sale are directed into the association's financial reserve and the sectorial fund for price regulation. As the market is saturated and the demand drops, the enterprises, upon agreement with the trade organizations, may reduce the prices. In this case, the losses will be compensated at the expense of the financial reserve, and if this reserve is not enough, then at the expense of the profit remaining within the management of the enterprise.

The right is granted to set temporary retail prices for improved quality new goods at a mark-up of up to 15 percent, based on the decisions of the artistic-technical council of the association or enterprise, and up to 30 percent at the

decision of the sectorial artistic-technical councils. The administrators of the enterprises, associations and ministries bear personal responsibility for the justification of the mark-ups. The USSR Goskomsen [State Committee on Prices] is charged with implementing control over the mark-ups.

It has been established that the sum remaining for the enterprises from mark-ups to retail prices (after deduction of funds used for reimbursement of additional expenditures for the manufacture of improved quality goods) may be channeled into the fund for production development, the fund for social-cultural measures and housing construction, and the price regulation fund.

Mark-ups are not set for children's goods. To stimulate their production, preferential standard deductions into the budget from profits are established, and increased deduction standards for economic incentive funds.

[Question] What changes will take place in the management of the sector?

[Answer] Currently in the USSR Minlegprom there is a three- or four-unit system of management in operation. It is rather cumbersome and inefficient. There are plans to reduce the number of units.

A course has been taken toward creating intersectorial industrial-trade associations (for example, leather-footwear, textile-sewn goods, etc.) with company stores. The organization of NPO [scientific-production associations] is envisioned. Much attention is being given to the rational combination of large, medium and small enterprises. Branches of large enterprises will be created in rayons where labor resources are present.

A considerable volume of work must be done to develop the foreign economic ties with the socialist countries. Specifically, the development of joint enterprises is being outlined, as well as the organization of production based on provision of raw materials for consumer goods in these countries and their delivery to the USSR. The USSR Minlegprom has been charged with the functions of organizing and ordering such goods. The All-Union Cost Accounting Association "Soyuzvneshelegpromkoooperatsiya" is also being created.

The June (1986) Plenum of the CPSU Central Committee pointed out that in the principle plan the task of increasing goods production may be resolved only on the basis of technical retooling and reconstruction of light industry enterprises. At the present time, the program of modernization of the sector's fixed capital is being defined. Specifically, it calls for the reconstruction and technical retooling of a number of textile enterprises. This will make it possible to achieve a four-time increase in the output of jacket and raincoat blend fabrics.

In the sewing industry we are planning to introduce around a thousand integrated-mechanized lines of a new generation. This will ensure an improvement in the product quality and an increase in labor productivity. Twenty-six sewing factories will be reconstructed with the participation of foreign companies, who have accumulated much experience in the production of fashion goods. The output of fashion footwear, as well as sports and children's patent leather shoes will increase.

[Question] What funds will be used to pay for the implementation of reconstruction and technical retooling?

[Answer] For now, much is done at the expense of capital investments allocated by the state. In the future, enterprises generally will themselves have to earn the funds for these purposes and make more active use of credit. Therefore our specialists are now giving primary importance to intensifying cost accounting and developing the independence and responsibilities of enterprises for the results of their activity.

Currently in the sector, administrators of all ranks are being actively trained to work under new conditions. The basic positions and sense of the resolution are being explained to every worker, so that the new economic management mechanism may start to work effectively beginning in 1987.

12322

CSO: 1827/158

HOUSING, PERSONAL SERVICES

EFFORTS MADE TO IMPROVE TOURIST CENTERS IN FAR EAST

Moscow TRUD in Russian 17 Aug 86 p 2

[Article by A. Kurbatov, special correspondent for TRUD: "The Cruise that Didn't Come to Be: How to Improve the Organization of Tourism for Inhabitants of the Far East"]

[Text] Vladivostok-Moscow -- "My 10 year old son has already flown more than 20,000 kilometers in airplanes. I myself have flown around the earth at the equator 6 times while my wife has 3 times. You think that we are fantastic aviation enthusiasts. It is nothing like that. We are residents of the Far East, permitting ourselves the luxury of taking a normal vacation 2 or 3 times a year in the "Big Land". What is to be done. There are unbelievable lines at local tourist facilities and the vacation homes. So we wander from one end of the country to the other losing our health on the road. Also these flights are painful to the family budget. When will there finally be a solution to the vacation problem for the inhabitants of Siberia and the Far East?

V. Semenov,
Worker, Dalzavod

Passenger traffic in the Far East in the summer reminds one of a powerful ocean tide. During that time hundreds of thousands of people living on that side of the Urals spend their vacations in the European part of the country, where there are more developed tourist facilities, vacation homes and guest houses. They throng crowded Black Sea beaches, the Baltic, the Ukraine and the area around Moscow, spending lots of time. But there are other expenses!

What are the experiences from such acclimatization? One can learn about them from any Far Eastern resident, riding and flying 10,000-15,000 kilometers.

Now, something else: the turnover of key personnel in these remote regions is the highest in the country. The frequent change of workers and specialists in Siberia and the Far East inflicts large losses upon the national economy. Economists have calculated that to supply a person living here with all necessities costs 20,000 rubles more than for a person living in the south.

These people must be fought for and everything done to maintain working order in remote regions. The organization of leisure time does not play a major role here.

There is nothing new in this. For a long time there have been discussions about tourism development in Siberia and the Far East. In the beginning of the 1970's when a special government decision was made about the development of tourist and excursion work, Far Eastern kray and oblast tourist councils very loudly made themselves heard and worked energetically. Special activities were observed in the Maritime region. Here it was decided to create a tourist center for workers in Siberia and the Far East.

Organizers of tourism in the Maritime region should be given their due. At that time they did a lot quickly. While in 1972 80,000 tourists visited the Kray, soon after there were more than a million tourists annually.

I remember when, in August 1970 I and a large group of journalists were invited on board the Sovetskiy Soyuz, the largest diesel powered ship at that time. A cruise on the Amur Gulf was advertised and the sailors did everything to please us. An orchestra resounded on the decks of the floating city, there was a dance hall, gaming room, theater and swimming pool. Responsible comrades guided us through the 200 meter long ship and talked about how ocean cruises were useful and pleasant, how the Far Eastern Shipping Company had a fleet capable of meeting the demands of all tourist organizations in Vladivostok, Khabarovsk, Magadan, Petropavlovsk-Kamchata and Yuzhno-Sakhalinsk... Initially much was promised. Soon, however, the Far Eastern Tourist express lost speed and quietly rolled into a dead end...

What was the problem? As usual, the material base was too weak. The Main Construction Administration in Vladivostok reacted coolly to tourist facilities. The "Turist" Hotel in Maritime Kray became a prime example of delayed construction. There was very lax rebuilding work on these tourist facilities: Gornyye Klyuchi, Vladivostok, Lazurniy Bereg. At that time Minsvostkstroy [Ministry of Construction in the Far East and Transbaykal Regions] there was no hurry in strictly questioning its Main Administration for disruptions in the construction of important tourist facilities in Maritime Kray. And, we note, they are still in no hurry.

Special mention should be made of what the USSR Ministry of the Maritime Fleet can do to develop tourism in the Far East. This should not be mainly a matter of promises and disappointment.

An obsolete fleet, which has served its time, has been retired from the passenger and cruise lines in the Far East. The USSR Ministry of the Maritime Fleet has not replaced the large diesel ships Ilich, Rus and Sovetskiy Soyuz, which could haul thousands of people. Of course, the construction of a new fleet is a complicated matter. If this were the only problem for the organization of cruises from Vladivostok!

The Soviet passenger fleet is one of the world's largest. However, it is concentrated in some ports, while in others --- alas... In the Black Sea ocean liners almost follow in one another's wake, but in the Pacific Ocean only small

ships, unsuitable for the region, travel routes many thousand knot long. Our paper wrote about this in 1983. After that the Ministry of the Maritime Fleet made a decision to transfer the Aleksandr Pushkin to the Far Easterners. The Kray tourist council management was in high spirits about this ship's arrival at Vladivostok, but it was soon let down -- even without tourists there's plenty of work with an old ship.

One ship will not cut the Far Eastern tourist knot. In the offices of the Morspassflot [Maritime Passenger Fleet] Administration there were discussions about redeploying the domestic passenger fleet between shipping companies, however, the matter has not moved beyond words. This is too bad. During the 12th Five-Year Plan the domestic passenger fleet will only be reinforced by two 400 passenger ships. Upon the Ministry's decision they will be transferred to the Far East. However, this will not solve the problem. Of the 8 ships now operating in the Pacific Ocean, 2 have already been written off and six are going for scrap in the immediate future.

What about construction workers? After all, the interests of many construction ministries and departments now stretch out behind the Urals. Their efforts would be fully sufficient to move things forward. However, fragmentation hinders their solution to pressing regional tasks. In selecting regional priorities they still do not give serious consideration to specifics in territorial development. Although effective means for overcoming these tendencies have been proposed long ago, nobody is fighting them. Builders' work should be directed not only towards creating jobs, but above all towards creating the conditions people require, independently of what profession they belong to.

Government decisions in recent years have forced builders to turn to social, cultural and everyday service facilities. Nevertheless, they still focus on production facilities. Why? One hears appeals to account-plan indicators, that it is not advantageous to them to build guest houses, sports halls and tourist facilities. With this especially in mind, I turned to several sector ministries and everywhere received the decisive reply: There are no really substantial obstacles. In addition, they told me that it was advantageous to work on cultural and everyday service projects because it was less labor intensive than factories, mines or roads. Obviously, the entire matter is due to management's conservative attitude: the main demand is for production facilities, everything else is come what may.

At the Russian Republic Council on Tourism and Excursions I learned that special scientific-research and design organizations had studied the potentials for using and developing recreational resources in all economic regions in the republic up until the year 2025. They were unanimous in concluding that among others the zones receiving preferential development should include: the Amur area, Sakhalin, Kamchatka and Maritime Kray. Have organizations concerned listened to their authoritative opinions? Not at all. Minvostokstroy's work plan for the 12th Five-Year Plan does not include a single tourist facility, other than the Tunist Hotel, which has been carried over from plan to plan. This is in spite of the fact that in 1983 the RSFSR Council of Ministers and the APCCTU passed the decree: "On Measures for Further Improvements in Tourist-Excursion Services in Maritime Kray",

obligating builders to set about constructing the hotels and campgrounds which are so important to the Far East. However, as is known, a decree is not the most difficult thing, the main thing is to organize and realize it.

Does this mean that Far Easterners must continue to leave, flying like birds to distant vacation spots?

11574

CSO: 1827/183

FUELS

OIL FIELD CONSTRUCTION EXPENDITURES EXAMINED

Moscow BYULLETEN STROITELNOY TEKHNIKI in Russian No 3, Mar 86 pp 18-19

[Article by USSR Gosstroy [State Committee for Construction Affairs] Glavgosexpertiza [State Appraisal Main Administration] Oil and Gas Department senior appraiser L. V. Kalinin under the rubric "Informational Materials": "At USSR Gosstroy Glavgosexpertiza--Reducing Capital Expenditures in Planning the Construction of Oil-Field Surface Facilities"]

[Text] The assimilation of oil fields is carried out, as a rule, in several stages. The stage nature of the assimilation is determined by the insufficient extent of their exploration by the time of their placement into operation, as well as the construction of new process facilities in the later stages of development. The elaboration of a number of geological and industry parameters for fields in the test-production operational period permits a reduction in the time from the moment of discovery to their placement into operation with the production of industrial petroleum.

Taking into account the specific nature of operations in constructing oil- and gas-field surface facilities, the development of plans for the construction of surface facilities and complexes has been permitted (without the development of a scheme for the general plans of fields in full development) based on the oil and gas reserves confirmed under established procedure and the technological schemes (plans) for the development of these fields.

In 1985, a number of plans for surface facilities at oil fields in various regions of the country, including West Siberia, which is the principal oil- and gas-producing region, were considered in the Oil and Gas Department of the Glavgosexpertiza of USSR Gosstroy.

The leading planning organization for the development of plans for the oil-field surface facilities of West Siberia is Giprotymenneftegaz [Tyumen State Institute for the Planning of Oil and Gas Facilities] of Minnefteprom [Ministry of the Petroleum Industry]. Plans executed by this institute for the surface facilities of additional wells at the Agansk Field and the expansion of surface facilities at the Severo-Varyegansk Field (phase II) were reviewed. Both fields are located in the Nizhnevartovsk region of the Khanty-Mansiysk Autonomous Okrug in Tyumen Oblast, a considerable portion of the territory of which is occupied by marshes and small lakes and rivers.

The harsh natural and climatic conditions complicate the construction work and require deep study of the adopted solutions for the successful execution of the basic task--reducing the time for bringing the fields to the planned production level.

The plan for surface-facilities construction at the Agansk Field reviews issues in the construction of wellhead surface facilities for additional operational and exploratory wells, the construction and expansion of facilities of the oil and gas gathering and transmission system, the maintenance of stratal pressure, heating supply and electrical supply and the construction of motor-vehicle roads and communications lines. The total capital investment was 90 million rubles, including 78.5 million rubles for construction and installation work.

The following plans for the construction of surface facilities at the Agansk Field were executed beforehand by Giprotymenneftegaz:

- test operation;
- the gathering and transmission of oil and gas from the initial section;
- a system for maintaining stratal pressure in the initial section;
- surface facilities construction;
- an Agansk Field--Vatinskiy Central Processing Station oil pipeline;
- expansion of surface facilities.

Appraisal of the plan demonstrated that the field surface construction was conducted in several stages, wherein the possibilities of expansion were not taken into account in the initial stage. As a result, the subsequent stages envisage the laying of new pipelines parallel to those already built. The pipeline collection and distribution system adopted and the disposition of the comprehensive gathering station (KSP), compressing pumping stations (DMS) and group pumping stations (KMS) on the field were not optimal and could have been executed with lower expenditures through the placement of a number of facilities on a single site, whereby the length of the pipelines could have been reduced by several dozen kilometers.

According to the results of the appraisal, it was recommended that the planning solutions for DMS-2 and the KSP be reviewed, unjustified structures be eliminated from the overall body of facilities and that the network of gathering and delivery pipelines be recalculated in order to reduce their length, as well as to reduce the estimated cost of construction.

The plan for expanding the surface facilities of the Severo-Vayegansk Oil Field (phase II) envisages the incorporation of the gas-lift method of mechanized oil production and the expansion of the oil gathering and transmission system, as well as the water-pumping system into the injection

wells in order to maintain stratal pressure (PPD), at a total estimated cost of more than 300 million rubles.

The appraisal demonstrated that the oil-preparation technology and equipment adopted in the plan, the systems for the automation and telemechanization of the oil and gas production and transmission and the valve fittings and compressor units for the gas-lift stations correspond to modern technical requirements. In planning phase II of the field surface facilities, progressive technical and construction solutions for the cluster drilling of wells, the conduit laying of service lines, the co-location of several facilities on a single site and the incorporation of computers for controlling and monitoring field development were further developed. A comparison of the principal technical and economic indicators of the Severo-Varyegansk surface-facility construction with plans for the construction of surface facilities at analogous fields of Tyumen Oblast, however, shows that they are considerably inferior to the analogues.

The poor economic indicators are caused to a considerable extent by the solutions adopted in the plan for the construction of field pipelines on landfill in type-III lakes and marshes and the construction of a double-line system for the delivery of high-pressure gas to the well clusters, as well as the gathering of product and the pumping of water into injection wells. The estimated cost of construction was increased due to the inclusion of a number of facilities in the overall construction site, the need for which was not justified by technical and economic calculations.

The appraisal determined the possibility of reducing the number of support personnel for the gas-lift compressor station, the length of the pipeline systems of various types and a considerable reduction of the estimated cost of the construction without reducing the capacity of the field.

The plan for the expansion of the surface facilities of the Severo-Varyegansk Field, as did the plan for the surface facilities for the additional wells of the Agansk Field reviewed earlier, envisaged the construction of additional pipelines (parallel to existing ones) and the installation of additional equipment and apparatus at existing process facilities and the construction of new ones, caused by an increase in the volume of oil production and the number of wells, the pumping of water into the strata and the conversion of the wells to a mechanized method of operation at fields built up earlier.

An analysis of the results of the appraisal demonstrates that the development of plans for the first stages of field surface facilities with oil reserves confirmed by the USSR GKZ [State Commission on Mineral Resources] by the Giprotymenneftegaz Institute is conducted without taking into account a possible increase in production volumes and surface-facility area. As a result, the subsequent plans envisage the laying of a large amount of new pipelines, the construction of which could be avoided if the flow capacity of the pipelines is established at once with a regard for the expansion of the built-up area and an increase in the volume of oil production and water injection. The development of alternative studies of the oil- and gas-gathering and distribution pipelines and the general plans for process facilities is not carried out.

Additional work on subsequent plans for oil fields under development could be substantially reduced if Minmetteprom, based on the analysis of plans for the surface facilities of fields in West Siberia, were to establish an overall trend for the growth of design indicators of the areas of construction and determine an increase factor for the base data indicators that are incorporated in the surface-facilities plan for the industrial-test period or the first stage of field exploitation.

The results of the appraisal of the plans enumerated above were taken into account in reviewing the standards for the technological planning of facilities for the gathering, transmission and preparation of oil, gas and water at oil fields. In particular, double lines for high-pressure gas feed to cluster wells and the gathering of product and feeding of water to PPD-system injection wells at the indicated standards have replaced single-line ones, which will conserve thousands of tons of oil pipe along with capital investment for the surface facilities of the oil fields of West Siberia.

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12321

CSO: 1822/317

PIPELINE CONSTRUCTION, OPERATION

PLANNING OF NATURAL GAS PIPELINE REPAIRS

МОНЕТРА ТЕХНИЧЕСКОГО И КОММУНАЛЬНОГО ХОЗЯЙСТВА in Russian No 5, May 86 pp 33-34

Article by V.V. Shiryayev and Ya. L. Rabinovich of Gipronigaz [State Natural Gas Design and Scientific Research Institute]: "Planning Natural Gas Pipeline Repairs".

[Text.] In our country, all branches of the economy employ a planned system of preventive maintenance which many years of experience have shown to be highly effective.

The planned preventive system of maintenance is also employed in the operation of natural gas pipelines and their adjacent facilities. The system consists of a complex of organizational and technical measures for supervision, technical maintenance and repair (ongoing and major) work to insure a reliable gas supply and preventive premature wear and breakdown.

Technical maintenance of pipelines consists of the following types of work:

- observation of the condition of outside pipelines, groups of pressurized gas installations (reservoirs and tanks), gas-regulating points and electrical protection equipment and the elimination of minor problems that occur during operation;
- periodic examination of gas pipelines and use of modern control equipment;
- periodic inspection and certification of pressurized-gas reservoirs;
- measurement of gas pressure within the pipelines;
- measurement of electrical potential in underground pipelines.

On-going maintenance is a type of planned maintenance in which the replacement or rebuilding of a small number of worn or damaged parts of individual pipeline structures and the regulation (adjustment) of equipment ensures the continuous and safe operation of the pipelines. On-going maintenance also includes preparation of the lines for the fall-winter and spring-summer periods as well as yearly inspection of separate units and parts.

Not all of the on-going maintenance can be planned or foreseen. For example, this work can also include the removal of small amounts of contamination that occurred after planned maintenance had been conducted and was therefore been undetected. If these minor problems are not corrected, they could lead to equipment failures and considerably hurt the performance of the pipeline.

On-going maintenance is performed by services such as the street network or underground pipeline maintenance services, the home gas equipment repair service, the pressurized gas service and the electrochemical corrosion protection service.

Capital repair of pipelines is carried out using resources specially assigned for that purpose. According to the current "USSR Gosplan's Depreciation Norms for Basic Resources of the National Economy", 0.5 percent of the initial cost of the equipment is assigned each year for capital repair of natural gas pipelines and pipeline structures.

For the technical inspection of underground pipelines to determine whether there is any need to conduct a major overhaul, commissions are created from the most highly-qualified engineers and technicians and headed by the director of the line network service or chief engineer of the trust (affiliat). Such a commission must also include a representative of the pipeline electrical protection service.

According to the results of inspection of data on the condition of the pipeline, the commission determines the locations of all defects and whether or not the given line can continue to operate, whether repairs must be performed, whether the line must be partially or fully rebuilt, how long the work will take and the necessary safety measures.

Major overhaul and replacement of distributive pipelines is generally much more complicated than any new construction. In the major overhaul of distributive pipelines, there are substantial differences in the work organization and technology and this includes the addition of dismantlement operations, removal of defective pipe sections, removal of old insulation and such specialized jobs as overhauling the pipeline walls and reinforcing joints, etc. Major overhaul is greatly complicated by the necessity of underground work and digging up the lines which still involves a great deal of manual labor.

The preparation of budget documentation for major overhauls on distributive pipelines is also complicated because it is not always possible to precisely determine the amount of work that will be required to overhaul or replace a line. To determine the technical state of pipelines, most natural gas services use highly-sensitive devices that can detect gas leaks and contamination of the line insulation without any need to dig.

As experience has shown, the large-scale introduction of equipment that can be used to check the state of underground pipelines makes it possible to precisely determine the amount of work that must be carried out and this helps

natural gas services to correctly calculate the needed resources and to realistically plan major overhauls.

The major overhaul of natural gas pipelines and pipeline structures involves many types of work (excavation, welding, insulating, masonry repair, well construction, electrical protection, etc.) requiring the involvement of many different professions and various machinery.

To improve the overhaul planning system, the State Natural Gas Design and Science Research Institute [Gipronigaz] and the Orggaz RPU [possibly Rayon Production Administration] have developed "Instructions for Planned Preventive Maintenance of Gas Pipelines and Pipeline Structures" which classify the types of technical maintenance and planned repair (on-going repair and major overhaul) and describe operations and correct scheduling. Special attention is given to using equipment to diagnose the technical condition of the lines.

The use of these instructions can improve the quality of the planning of work in the technical maintenance and planned repair of gas pipelines and pipeline structures, will contribute to more justifiable planning of the number of workers involved and their payment and consequently, will make it possible to more efficiently allocate resources for technical maintenance, on-going and major repairs and to avoid the expense of premature major overhauls.

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10201

CSO: 1822/316

ARTICLE DISCUSSES QUALITY OF LIFE PROPOSED BY PARTY

Moscow PRAVDA in Russian 27 Jun 86 p 2

[Article by Yu. Volkeev, doctor of philosophical sciences:
"A New Quality of Life: The 27th CPSU Congress: A Strategy
for Acceleration"; passages enclosed in parentheses printed in
boldface]

[Text] The goal of the CPSU's course for accelerating the
socio-economic development of the country is the attainment of
a qualitatively new condition of Soviet society. This concept,
which has been established in party documents, is extremely
broad and complex and its specific parameters must still be
defined more precisely. But it is already clear now that the
attainment of a qualitatively new condition of Soviet society
involves serious and positive changes also in the social sphere.
First of all, as noted in the CPSU Program, this involves the
guaranteeing of a qualitatively new standard of the people's
well-being, the creation of a basically classless structure of
society, the further growth of its unity, and the raising of the
level of the creative energy and work of the masses.

This basically implies the creation of /a fundamentally new
quality of life for the Soviet man and laboring masses,/ which
does not boil down only to material comfort, but takes in the
entire spectrum of full-blooded human existence. These
transformations are an important frontier on the path to higher
forces of human society, in which, in the words of F. Engels,
everyone can quite freely develop and apply all his abilities
and powers.

Of course, if one evaluates what has already been done by us in
the social sphere by the standards of world history, then the
following can be confirmed: in comparison with capitalism, real
socialism has created a new quality of life for the workers.
We are finished forever with the exploitation of man by man,
social and national oppression, poverty and unemployment.
The equal right to work and to its just reward has been

guaranteed. All citizens of the socialist society enjoy free medical care, education, and other social benefits. The union of the working class and of the peasantry and intelligentsia, all the friendship and brotherhood of all nations and nationalities are inviolable. Equal rights have been guaranteed to men and women. The young generation and veterans of labor do not have fear for the future. The people's masses are in fact participating in controlling the affairs of the state. All this is inaccessible to capitalism.

At the same time, it is fully justified to examine the dynamics of the quality of life within the framework of the new socialist plan, comparing what has been completed with what socialism can and should give the workers. This has also made it possible for the party to promote the task of achieving a new quality of life. In order to do this, it is necessary to realistically value the "efficiency" of our social system in the social sphere.

The quality of life is far from similar to the standard of life, which is expressed primarily in quantitative indicators. However, it is hardly correct to contrast the one to the other. The new quality of life, naturally, suggests a substantial growth of the people's well-being. And such growth is anticipated in the plans for the socio-economic development of the country, which were made by the 27th CPSU Congress.

The implementation of the enormous social program is planned on the basis of the accelerated development of the economy," it was noted in the June (1986) Plenum of the CPSU Central Committee. "The real income of the population will be raised, the supply of food and consumer goods will be increased, the service sphere will be expanded, and work for improving health care and education will be continued." Thus, the 1986 Five-Year Plan will become an important signpost in the progress towards a new quality and standard of life for Soviet people.

The provision of a qualitatively new standard of well-being involves the "satiation" of the indicators of the social economy to the new, more diverse and ever-expanding growing demands of the consumer through contact. The time has passed when it was possible to increase the production volume of goods in great demand, as they are called, without looking back to the final consumer. Today the planning of their growth, and also of services, should correlate more and more with public demands. Based on them alone, one can see that the production of certain types of goods and services should be increased by several times. In other cases, the quality and assortment of goods can be brought in line with the consumer's

JPRS-UNE-86-003

14 NOVEMBER 1986

USSR Report

NATIONAL ECONOMY

EKO: ECONOMICS AND ORGANIZATION
OF INDUSTRIAL PRODUCTION

No 7, JULY 1986

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Except where indicated otherwise in the table of contents the following is a complete translation of the Russian-language monthly journal EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA published in Novosibirsk.

CONTENTS

Economics of Scientific and Technical Progress

Acceleration of Scientific and Technical Progress Discussed (3-20) (V. S. Sominskiy)	1
Research Produces Economic Intensification (21-31) (N. S. Lidorenko)	14
Realization of Research Developments Questioned (31-35)	21
Functions of Personal Computers Related (35-42) (Yu. P. Voronov)	25
Possible Drawbacks of Computers Suggested (43-50) (G. R. Gromov)	32

The Branch: Condition and Prospects

Possible Development of Fishing Industry Suggested (51-68) (V. N. Krasnokutskiy)	39
---	----

The Enterprise: Daily Life Full of Problems

Product Quality Control System Described (69-83) (Yu. D. Popov)	51
--	----

Industrial Certification of Products Discussed (84-89)	
(V. R. Isakov)	61
Factors in Product Quality Investigated (89-99)	
(F. I. Palitsyn, M. M. Pimonenko)	65
Certification of Designs Suggested (96)	
(V. N. Tishchenko)	72
Recognition of Defective Work Urged (97-98)	
(L. F. Sukhodoyeva, M. V. Garbunova)	73
Improvement of the Economic Mechanism	
Ways of Improving National Economy Suggested (100-116)	
(Sh. B. Sverdlik)	75
Management Consulting	
Benefits From Management Consulting Related (117-129)	
(A. Ye. Luzin)	87
Industry and the Food Program	
Range of Underground Work Described (130-140)	
(P. K. Savorskiy, V. M. Kobets, N. A. Kholodkov)	97
Commentary	
Operation of Urban Passenger Transportation Discussed (141-152)	
(Aleksandr Yuferev)	105
Management of the Economy of Socialist Countries	
European Experience in Labor Placement Described (153-162)	
(N. G. Zakharova)	113
Economy of Developed Capitalist Countries	
Orientation of Intrafirm Management in Japan and the United States (163-178) (I. S. Oleynik) (not translated)	
Thoughts on a Book	
Book on Management Style Reviewed (179-188)	
(B. V. Prilepskiy)	120
Postscriptum	
Praise to Fools (189-190) (S. Arsenteyev) (not translated)	

PUBLICATION DATA

English title	: EKO: ECONOMICS AND ORGANIZATION OF INDUSTRIAL PRODUCTION No 7, Jul 1986
Russian title	: EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA
Author(s)	:
Editor(s)	: A. G. Aganbegyan
Publishing House	: Izdatelstvo "Nauka"
Place of Publication	: Novosibirsk
Date of Publication	: Jul 1986
Signed to press	: 27 May 1986
Copies	: 153,503
COPYRIGHT	: Izdatelstvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1986

ACCELERATION OF SCIENTIFIC AND TECHNICAL PROGRESS DISCUSSED

Novosibirsk: *PRAMENNY I ORGANIZATSIYA PROMYSHLENOGO PROGRESSA* (EPO) in Russian No 7, Jul 86 pp 3-20

[Article by V. S. Sominskiy, doctor of economic sciences, Leningrad Technological Institute of the Pulp and Paper Industry: "Scientific and Technical Progress: 'Look to the Roots...'"]

[Text] The 27th Party Congress set for us a task of principal importance: to bring the national economy up to the leading ranks of science, technical equipment and technology. This is not a simple task. It is possible to equip a plant with the best technical equipment and manufacture products according to an ideal waste-free and highly productive technology, and the consumer will not buy them. For the products do not satisfy his needs. Either they are not fashionable or they are inconvenient or they do not have a good appearance or they are generally ineffective to use. Thus the main goal of scientific and technical progress is the final product, and not "in general," but acquired by free will. This correction "free will" is very important, and the measure of its influence will be increasing continuously. Today it is being felt in the sale of goods for private consumption. But even in this sphere "free will" is not in full effect. Far from all kinds of goods and services are available in abundance and conditions have not been created everywhere for selection and preference. And in the sphere of industrial consumption this correction does not exist at all. Here the consumer, as a rule, acquires "what they give him" and "what they insist" according to the funds for equipment and materials, and certainly not what he would want. As a result there is a distorted idea of the real amount of the produced final product or the actual effectiveness of scientific and technical progress.

How can this problem be solved? In the first place, it is necessary to change over to wholesale trade in means of production. This is not a new task, but apparently neither the Gosstat nor the Gosplan nor the financial agencies want to deal with it, even though the effectiveness of scientific and technical progress decreases sharply because of this. As long as there is no wholesale trade it is necessary at least to take into account the actual (and not the planned-calculated) satisfaction of demands for material and technical means for manufacturing the final product. To do this it is probably necessary to have systematic investigations and selective questionnaires. They are necessary, of course, in the sphere of private consumption as well.

second, it is necessary to essentially improve the current system for determining the effectiveness of capital investments and the theoretical approach and take into account the effect for planning not only the consumption--in terms of the difference between the value of products that are actually sold at retail prices and their production cost for the manufacturer. As we change over to wholesale trade in means of production the effect here too will have to be determined as the difference between the actually sold products at established wholesale prices and the production cost.

In the third place, it is extremely important to have an objective estimate of the proportion of the final product in the gross national product. Then the account is organized on the basis of planned volumes of production and retail sales, and these are production and sales under the conditions of an artificially created deficit.

Normatives--Reference Points of Progress

Another path to accelerating scientific and technical progress is to create normatives.¹ In spite of a number of directives and decrees, little has changed in this area. Attempts to solve the problem during operation for a year or even several months through the forces of random people and organizations who have not dealt with this previously have produced only formal results in the majority of branches. Yet the Basic Directions for the Economic and Social Development of the USSR During 1986-1990 and the Period Up to the Year 2000 takes note of the need to provide for the introduction of a system of progressive economic normatives into planning and to utilize normative methods extensively at all levels of management and planning. It is necessary to have a system of normatives, beginning with purely technical ones (expenditure norms, technical parameters and specifications) and labor normatives, and ending with normatives of results, consolidated ones: expenditures, effectiveness, the scientific and technical level and the satisfaction of needs. Moreover the normatives should be such that it would be very difficult to achieve them and impossible to overfulfill them without outstanding scientific and technical achievements or unusual personal qualities found only in individual people ("Tear of the Father," "Tear of the Mother," "Tear of the Elder," and so forth). It seems to us that the work for formulating, establishing and revising (when the case is changed) normatives should be continuous and should be regarded as the most important work in planning and evaluating the results of economic activity as a whole and scientific and technical progress in particular.

In connection with normatives that function as an assignment we shall touch on the problem of standards. There are more and more of them. Is there an objective need for this? In our opinion standardization and its normative documents (GOST's, OSt's and so forth) should strictly monitor the quality of materials (parts, components, instruments and equipment) which are for general use. But why does one need a standard for a dress, a shoe, or sports equipment? If I like a suit and it fits me I buy it, if I do not like it in GOST will help to sell it. If specialized equipment makes it possible to do what the consumer wants, all that is necessary is an agreement with the

machines. Reliability will be provided by the use of high quality materials, standardized, painting and so forth.

Standards for everything—from a screw to a machine—will contribute to the dictum of the manufacturer and not at all to the interests of the consumer. Standardization agencies headed by the USSR Government are called upon to occupy an important position in providing for accelerated scientific and technical progress. But they cannot do this without any delay because of the desire to embrace the entire country in the standardization of raw materials and products for the entire country.

The Main Direction of Machine Building

Consequently, standardization for raw materials, processed materials (not for specialized ones), parts and components will solve it possible to solve right up to the problem of the prefabrication of structures. The main theory of machines and mechanisms and the practical application of it will parallel in principle to eliminate redundant work with design and the equipment. The appearance of these shops in machine building points out the system of repair work is explained only by the complexity of the process. Assortment and quantity of parts, components, instruments, and so forth, making (sections) which make it possible not to manufacture the individual any element of a machine, instrument or set of them for precise construction.

As we know (articles about this have appeared in the press) that the machine building tool first is dispersed in three kinds of machine building: in machine building itself, machine building of machine building (foundry) and in repair work, then certainly not the largest part of the machine building are to be found in the first category. While some nations in all stages of development of machine building itself as the basis of scientific and technical progress it would be expedient to transfer to it some of the machine tools and capital from other branches (including from repair branches) and at the same time to relieve it of the production of specialized machines necessary for only one branch or sometimes only one or two enterprises in the country, a function which is not natural to it. Such machine building devices and instruments could be assembled by their consumers, relying on prepared parts, components, sections and modules. The repair system should be organized analogously.

The degree of prefabrication of elements signifies not an ordinary increase in labor productivity, but a giant leap. Not 40-50 percent, but 100-150 percent. And in order to follow this direction of scientific and technical progress we need not so much additional capital as organization and planning mechanisms.

The Position of the Scientist and the Engineer

In order to accelerate scientific and technical progress it is important to think about the role and position of scientific and engineering labor in public production and expanded reproduction of a socialist society. With respect to science everything appears to be clear; this is the most important

productive forms, which provided all elements of production (proper salaries in the form of scientific and technical programs). But still there are no include sciences in the production or reproduction sphere? General expenditures on science be taken from the fund for compensation of the fund for consumption? These are not at all abstract questions. Until they are resolved, scientific production associations will remain "on chairs." And this is why there are only a couple of hundred of them in industry. Until these questions are resolved we will not be able to remove the obstacle that between scientific research institutes and possible associations for the development and application of new technical equipment.

Today expenditures on science are financed from the state budget as social-cultural measures (education, public health, social security). All attempts to form an effectively functioning system of "science-production" have run up against this obstacle. Yet the works of a number of our economists have proven and shown that one cannot regard all of science as a separate sphere of public labor. What today is called branch science, which receives a large part of the funds allotted for science, should be included in the production sphere. Workers in branch science (and also in the corresponding branch laboratories) are participants in the production process. And the nonproduction sphere includes that part of science which is engaged in fundamental research in all branches of sciences, sciences related to education (training) and public health, and sciences having their own related way-to branch science.

In domestic production there are individual, partly isolated attempts of combining science and production into a unified program. Such attempts have been in operation for quite a few years now and the Technical Institute Association. But in the main the possibilities of planning and financing science remain the same as they were at the beginning of the decade of the decade of industrialization. It seems that this is not only explained by the low level of utilization of the scientific potential of the labor force for accelerating scientific and technical progress. According to current "theoretical" ideas of planning and financing, science and the corresponding practice, with science comes under the idea of "theoretical" as the overall heading of social and cultural measures, and it is separated by a solid barrier not only from production, but also from the idea "Science and Scientific Service." Yet approximately one-third of it is involved with theoretical and fundamental research, and approximately applied technical research. Differentiation in the planning and financing of science, taking into account its position in public production, is an important aspect of the time and one of the levers in the acceleration of scientific and technical progress.

By including branch science in the production sphere, we remove unjustified barriers between applied science and engineering labor. The engineer in production is primarily a researcher. The main and truest of his labor are to reveal and put to work reserves for improving the composition of labor and production, technology, and qualitative characteristics of the production and raising the scientific and technical level and increasing the effectiveness of the production process. There is no principal difference between the content of the labor of the scientific associate of a branch scientific research

institute (or scientific research institute that is a part of an association) and a shop engineer, an associate of a technical division of plant management and a designer. The only difference is in their job duties. This means that the principles for payment and moral incentive should be the same for all of them.

Of course what has been said is true only when the engineer is relieved of management functions that are not properly his. For a number of reasons (both historically conditioned and subjective, related to the neglect of scientific organization of labor and management) engineers have been made responsible for various management functions. They are employed as foremen (who are not free being able to show the worker how to work) and chiefs of shifts, sections, work rooms, shops and productions. They are employed as head engineers. And, of course, as engineer-directors, engineer-administration chiefs, engineer-ministers and managers of state committees and departments.

All these specialists in the area of technical equipment and technology make an extremely modest contribution to scientific and technical progress. According to our estimates, the engineering labor of engineers who are forced to work in management amounts to no more than 15-20 percent. And what a powerful acceleration scientific and technical progress would achieve by including in its movement the gigantic potential of the corps of engineers which has been created after many years of effort on the part of the party and the Soviet state!

There is no doubt that management of the collectives and their economic and social development is a no less important matter. But specialists of a particular profile are needed here. We can arbitrarily call them organizers. They need to know the theory of management at the level of the brigade, section, shop, plant, association, branch and national economy. They should also have knowledge of sociology, psychology, the fundamentals of economic and labor law, scientific organization of labor, economics and organization of production with fundamentals of planning, statistics, marketing and so forth. And in addition to all this it is necessary to have personal capabilities and inclinations for such activity, to have party principles and a high level of responsibility, and be distinguished by what is called the ability to take contact. Up to this point the majority of managers have used the trial and error method to become what they are. But they should be taught, and taught not in short-term courses and departments, but over a period of 2-3 years. Life shows that good organizer can be acquired from the ranks of engineers, scientific workers, and brigade leaders, that is, people with the long experience and knowledge. But let the engineers do their own work—scientific and technical progress.

Concerning the Payment and Prestige of the Labor of Engineers, Scientists and Organizers

In our opinion there is no need to prove the point that the payment for scientific, engineering and organizational labor should be higher than for physical labor. This has been the case in all times and the more so in the age of the scientific and technical revolution. There is no doubt that the

director of the State Bearing Plant No 3, Comrade I. Yashkin, was right when he said that in a situation where the average earnings of the worker are higher than those of the engineer or technician there will certainly not be any progress.² Let us add to that that the moral incentives for engineering labor and the labor of a worker also have a clear advantage in the direction of physical labor. An eminent worker, a winner of labor orders and medals who has completed a correspondence higher educational institution, figuratively speaking, falls from the ladder of moral prestige. He was a bonded worker and has become a rank-and-file engineer. What reason has he to think about accelerating scientific and technical progress!

A creative interpretation of Marxist-Leninist ideas concerning the collective (total) worker will help to change this situation, which has been aggravated severely during the past 15-20 years. But in a common language, in the production system there is no participation that is more or less important. Everyone is necessary and important: the worker, the employee, the engineer, the manager, and the scientific associate. It is precisely in the socialist social formation under the conditions of public property that the concept advanced by K. Marx of the collective worker assumes outstanding significance. The antagonism inherent in capitalism does not and cannot exist among its constituent parts. And the labor of the worker should be evaluated under socialist conditions on the basis of accounting for personal qualities and personal contribution without any restrictions or advantages except those that are generally known: the limit of the overall wage fund and the more rapid growth of labor productivity. The decree of the CPSU Central Committee, the USSR Council of Ministers and the AUKCIU which came out on 22 May 1989, "On Improving Wages for Scientific Associates, Designers and Technologists in Industry," was directed toward increasing the material and moral incentives of workers of these categories to accelerate scientific and technical progress and create and introduce new technical equipment and technology. A link was not to provide for a closer link between the payment for their labor and their personal contribution to the acceleration of scientific and technical progress.

The decree also envisions increasing the role of bonuses in stimulating scientific and technical progress. And indeed it is time to think about the effectiveness of numerous bonuses. Hundreds of thousands of people are engaged in their calculation, verification and establishment, and many thousands more are engaged in straightening out conflicts. The basis for wages, in our opinion, should be salaries and wage rates, and they should be necessarily increased (or decreased) on the basis of certification and under the supervision of the labor collective. And bonuses should be used only as a form of incentives of a one-time nature and should be awarded for a specific job, taking maximum advantage of the competitive system and paying them in appreciable amounts. And, of course, one cannot limit the payment to various schemes, distribution charts and other bureaucratic creations. And here again Comrade I. Yashkin is undoubtedly right: "The problem for our directors is also in the fact that we are free to have 10 engineers who do not think and within the limits of the established salaries pay each 10-20 rubles a month. But we do not have the right to replace those 10 with one who does think and pay him according to the results of his personal labor which has found concrete reflection in the economic activity of the enterprise. It is extremely short-

sighted from the economic and also from the social standpoint to crowd the evaluation of mental labor into the framework of average monthly wage rates."

The Significance of Planning

In the USSR more than 1 million people are engaged in the planning of enterprises, buildings, structures and other facilities, and almost 70 percent of them are engineers and technicians.³ The role of planning in increasing the effectiveness of public production and realizing the achievements of science and technology can hardly be overestimated. It is precisely in the plans that one invests the most progressive solutions and, alas, allows mistakes which lead to arrears. Yet up until recently planning has occupied a clearly secondary position in capital construction--both new construction and reconstruction and technical renovation. Expenditures on planning have remained at practically the same level for many years, comprising only 2 percent of the overall volume of capital construction. This is several times less than in industrially developed countries (8-10 percent). Economizing on planning ends up in inefficient ratios between the active and passive parts of fixed production capital. In 1964 the proportion of equipment in capital investments amounted to 37 percent, and in construction and installation work (and, correspondingly, buildings, structures and so forth)--52 percent. Yet effective production which relies on the achievements of scientific and technical progress is possible only with a reverse ratio.

There are the most diverse explanations of this; many decisions have been made to raise the level of planning. But one can hardly count on success from decrees if they do not take into account the circumstances that ensue from the position of planning in the reproduction cycle. It is precisely planning that substantiates and calculates solutions that provide for effective expanded reproduction on the basis of reconstruction and technical renovation. Planning is not an appendage to construction; it is a program introduced into the mechanism of capital construction and is the brain of the construction organism. In order to develop a program it is necessary to combine scientific and technical achievements with the actual conditions of reconstructed production, the capabilities of construction and the deliveries of equipment. This can be done only by highly qualified engineers, whose level and payment should be commensurate and compatible with the level and payment of the leading managers of industry, eminent scientists and talented workers. This pertains also to specialists of planning institutes and to those who are engaged in planning within the framework of associations and enterprises.

But even the most talented planner has at his disposal only that which he has gleaned from catalogues, prospectuses, reference works and express information. But this is in the present day, while the plan must include what will be available the day after tomorrow. In our opinion, there is only one solution here: to rely on experimental production.

Experimental Production—The Foundation of Progressive Technology

It would be good to understand and firmly grasp the idea that moving from the laboratory or design bureau directly to production is the grossest violation of technological discipline. I recall that an extremely respected director of a large enterprise, in response to a suggestion to equip an experimental shop, said: "Well, we shall bring something in, try to test something. If the development works we will immediately take it to the boiler" (and this "boiler," let us note, is not a kitchen boiler, but a container that will hold 320 cubic meters and is the height of a 15-story building). This director's colleagues, sitting in the branch ministry and the Ministry of Foreign Trade, always cross out experimental installations when purchasing sets of imported equipment. For purposes of saving, of course.

Yet the experimental model, the experimental technology, the experimental equipment and the experimental batch--these are the basis for planning which is intended for industrial embodiment of experimental data from 5-7-10 years later.

But experimental production is not only the base of planning. Its results were used for arranging industrial production under the most advantageous conditions. Without experimental verification and testing one cannot teach the workers of the enterprise that is assimilating the new production or prevent accidents and deviations from the specified conditions, and as a result--sharply reduce the time period for assimilation. It has been calculated that delay in assimilation is hundreds and thousands of time more costly than expenditures on experimental installation and its operation.

Experimental production is intended not only for reproduction of the results of scientific developments under conditions that are as close as possible to the future industrial manufacture. At existing enterprises its purpose is to serve as a center for verifying the proposals for improving technology, a center for testing the changes necessary in technology because of fluctuations in the composition of raw and processed materials, because of changes in the design and the working conditions for the equipment, and so forth. It is a shame and a pity to read in branch scientific and technical journals discussions of how "skillfully and flexibly the equipment operator N controls the technological process with an immense aggregate." What kind of technological discipline is this and where is the scientific and technical progress if the technological process can be changed by the worker at his own discretion! Only after experimental verification is it permissible to make changes in the existing technological process, and then it should be the law: no deviations from the established conditions.

As engineers engage more and more in engineering labor, the basic place for their work will be experimental production, which is necessary, in our opinion, at all enterprises: new and old, large and small, complicated and simple.

Concerning Control of Scientific and Technical Progress

The acceleration of scientific and technical progress depends to an appreciable degree on the branch ministry and the state agencies that directly influence the directions of scientific and technical progress, its planning, financing and realization of the results. But with their current composition, when establishing rules and procedures for forming staffs, these organizations are incapable of performing many functions in controlling scientific and technical progress. They delegate these "function-duties" to scientific and planning institutes under their jurisdiction. The author recently had occasion to participate in a coordination conference concerning a branch plan for scientific research work. Approximately 40-50 percent of this work in the area of economics and management and 15-20 percent in the area of technical equipment and technology is actually instructions from ministries and central planning agencies which they should carry out themselves.

For more than a decade, under the strong leadership of the USSR Ministry of Finance, there has been a battle to reduce the number of management personnel. But never have they set the task of optimizing these personnel, bringing them in line with the requirements and duties that ensue from changing over to an intensive economy on the basis of scientific and technical progress. There is no doubt that it is impossible to approach the question of relations between management personnel and production personnel in a socialist society with measures and evaluations that are borrowed from capitalist social relations and early stages of socialist construction. At one of the conferences the director of the ZIL Association at that time, the well-known manager Comrade P. D. Borodin correctly noted: "The management staff can increase and it increases here at ZIL as long as this contributes to increasing labor productivity and the income of the association's collective at more rapid rates and on a large scale." The same thing is true for other units and levels of management.

This means that it is not a matter of whether there are too many or too few workers employed in management but of what they are engaged in and how, and what the advantage of this is. In this connection it makes sense to transfer to the staffs of ministries and departments those workers who are currently employed in scientific research institutes and design bureaus with instructions from these same ministries and departments. Each would begin to do his own work.

Another thing that is certainly not secondary is the question of providing personnel for the staffs of ministries, central departments, scientific research and planning-design organizations and VUZes that are located in Moscow, Leningrad, Kiev, Sverdlovsk and the capitals of the union republics. There is an iron rule in effect here: that of the residence permit. The only exceptions are for a small number of high official posts. This exception does not extend to scientific workers, leading designers, VUZ professors, head engineers of design or head specialists of ministries or departments. Such a "policy" has a negative influence on the effectiveness of scientific and technical progress. Since a large part of the leading scientific-technical and planning organizations are concentrated in Moscow, Leningrad and a few other centers, it turns out that the preparation of the most important

Scientific, technical and planning decisions can be handled only by those who have a residence permit for these cities. One cannot help but be frustrated: tens of thousands of workers in Moscow and Leningrad annually receive the so-called limited residence permit and as many more receive it immediately after completing the vocational and technical school, but this cannot be extended to the sphere of management and science. Why?

The management of scientific and technical progress at the interbranch and branch levels should be based on carefully developed comprehensive target programs. Everyone recognizes this but it is being carried out slowly and not very effectively. One of the reasons was pointed out above: there is nobody to do this; Moscow does not have the necessary number of workers with the proper competence or qualifications or the proper talent. In our opinion, any program must be personified in order to succeed. In the first place, the program must be headed by an individual: scientist + organizer. Now the programs are headed by the "responsible ministry," that is, they are impersonal. In the second place, the manager of a program should be given the proper authority. But even if he is appointed by a responsible ministry, he has practically no rights. He cannot distribute personnel (including because of limitations on residents' permits), shift resources or create reserves, dispose of monetary means or determine the salaries and bonuses according to the capabilities and return from the workers participating in the program or determine the directions, time periods and volumes of construction work and material and technical supply. In a word, the manager of the program today can only give advice, request and persuade....

In the third place, within the framework of the program one should reflect the interrelations between those who carry out its sections and assignments of scientific and production organizations. We have discussed these interrelations above.

Control of scientific and technical progress can no longer be reconciled to formalism and stagnation in the structure, plans and systems for payment in scientific organizations of any profile or jurisdiction. Of the many problems that are arising here, we are mentioning only the sizes of the organizations, the working conditions, the right to search and risk and the system of contracts.

The Scope of Scientific Research Institutes

Because of unknown reasons, but perhaps because of the "allergic reaction" of financial agencies to the increase in management personnel, a regular scientific institution is recognized only as a large one which has no less than 500-600 people (and even better--2-3,000 workers). There is the opinion that science can be moved forward only en masse: the more people, the more success. There are many examples of consolidation in which two or three and sometimes four or five scientific organizations have been merged into one, and this was welcomed from all sides. But in spite of arithmetic, the sum of the components has turned out--in terms of results--to be much less. Sometimes there has been no sum at all.

In our opinion, the number of personnel of scientific and scientific-technical organizations should be determined according to only one criterion--scientific controllability. And this is somewhere within the range of up to 100 people. Beyond this there arises something like a federation, association, corporation, and so forth. Such associations are not rare in modern science with its complex technical equipment, the combination of many branches of knowledge, the coming together of laboratories and design bureaus, and the entry of assembly work directly on the desk of the researchers. Working according to a unified target program these associations can be on one territory or on different ones, but they must include independent scientific organizations headed by scientific directors and their deputies--the organizers. Scientific organizations with the same name are undoubtedly useful (not to be confused with those that duplicate one another). For they will advance scientific and technical progress on the basis of creative competition! The worst thing for science is the lack of scientific disputes, a monopoly in judgments. How can one avoid this if our entire great country has only one scientific (scientific-technical) giant in any specific area of science or technology.

In socialist countries such as the GDR, Czechoslovakia, Hungary and others there are few institutes with more than 15-20 scholars, and they are of great international renown. The main advantage from this is the scientific independence of the leaders, their reputation and, of course, important achievements in science and technology. How important this is for acceleration of scientific and technical progress! We should not like to offend any eminent scientists, but an analysis of their biographies shows that their "stars" have risen not during the period of leadership of enormous institutes, but during those happy times when they were given independence in a small collective.

We are not suggesting that the current giant scientific research institutes be closed. But perhaps it would be worthwhile to think about giving the dozens of directors included in them the right to citizenship. And, of course, the decision concerning the creation of a new institute or design bureau should not be dictated by the criterion of fear of one more director, but the criterion of the scientific maturity of the scholar. And the institutes could be included in production associations or large enterprises, as in departments of VUZes--anywhere where a productive scientist or designer agrees to work.

Working Conditions and the Right To Research

A good deal has been written about working conditions. We firmly hold a position of flexible working time for people employed in scientific and technical, including engineering, activity. For only then is the broad path opened up for scientific research which never anywhere can be fit into the framework of "from and to" with a break for lunch.

At one time quite a few people were quoting the judgment of one eminent scholar concerning the inadmissibility of satisfying curiosity at the expense of the state. But why, actually, should one condemn this desire? Who can decide where idle curiosity ends and useful, creative curiosity begins? We

know of countries where private firms permit scientific associates to study what they find interesting and generously allot funds for this. And they do not expect returns today or tomorrow or even the day after tomorrow. It would hardly come into anyone's mind to reproach private firms for their philanthropy. This means that this is a very good thing for them. Why is such "free will" disadvantageous for us in a socialist country? Is it not the prohibition of free will that is the cause for our backwardness in a number of essential categories, and is it not in the support of free will in spite of instructions, inspections and impediments, that we can find the reasons for success in a number of important areas of Soviet science?

Science and the branch of it called engineering activity are distinguished from production in any form by the nature of probability and the element of risk. According to our data the probability of reaching the goal in applied research amounts to an average of about 80 percent, in the fulfillment of engineering developments--about 90 percent, and in planning facilities--92-95 percent. And it is never 100 percent. This means that it is necessary to plan and evaluate this activity correspondingly, and also to finance it correspondingly.

People might object: even now it is permitted to allot up to 20 percent of the funds for research work and work involving initiative. Yes, it is permitted. but nobody takes advantage of this right. Why? Because such work is rated two or three categories than that which produces an immediate effect, and who is willing to tolerate both material (considerable) and moral harm? In the second place, because this work cannot be fit into the "from and to."

We are far from recommending that labor discipline be slackened in scientific and technical organizations. The discipline should be the strictest here. But it should be scientific discipline, which consists in daily checking: what has been done, what happened, where was the success, where was the failure, what should be done next. I have had the good fortune to work under the leadership of a scientist who asks these questions of every associate every day. True, he did not have 500 under his jurisdiction but only 30 people, but he went to conferences at least once a month.

The right to research and the right to risk should be earned. Far from everyone who enters the door of science can be trusted with it. How does one earn it? By defending ideas, responsibility, conscientiousness, a true thirst for knowledge and a desire to direct it to the benefit of the country. In this connection the contract form of enlistment in scientific and scientific-technical activity seems deceptive. It is widely used in capitalist countries, but there they have sharply negative aspects along with the positive ones. The army of unemployed is being filled by people who have not fulfilled their contract. Under our conditions this danger does not threaten someone who has not fulfilled a contract. The system of contracts for a certain number of scientists, designers and planners would remove many obstacles from the path of creative research and the fulfillment of complicated scientific and technical work in the shortest possible period of time. If someone is frightened by the word "contract" one could call this form an order, although we do not see any great difference here.

The unforgettable Kozma Prutkov repeatedly warned against trying to embrace the unembraceable. And problems of accelerating scientific and technical progress are truly countless, and the number of questions arising here is also countless. But this same Kozma Prutkov taught us to look to the roots. We have tried to take a look at several of these roots, roots which have so far been hidden for one reason or another.

FOOTNOTES

1. The author has already addressed this subject on the pages of the magazine. See EKO No 6, 1978, pp 93-110.
2. PRAVDA, 20 August 1985.
3. "Narodnoye khozyaystvo SSSR v 1984" [The USSR National Economy in 1984], Moscow, "Statistika", 1985.

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CSO: 1820/199

RESEARCH PRODUCES ECONOMIC INTENSIFICATION

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 7, Jul 86 pp 21-31

[Article by N. S. Lidorenko, Corresponding Member of the USSR Academy of Sciences, scientific manager of the NPO "Kvant", Hero of Socialist Labor, winner of Lenin and State prizes (Moscow): "Fundamental Research--The Highest Form of Intensification of the Economy"]

[Text] The Basic Directions for the Economic and Social Development of the USSR During 1986-1990 and the Period Up to the Year 2000 set the task for providing for extensive introduction into production of principally new technologies which make it possible to increase labor productivity many times over, to increase the effectiveness of the utilization of resources and to reduce the material-intensiveness of production.

The revolutionary technologies are based on the utilization of the latest achievements of fundamental research. Using a number of examples of research and development of new energy-generating devices, we shall demonstrate the possibilities of the achievement of the ultimate significance of scientific and technical progress which make it possible to economize on labor, material and energy resources at the same time.

All ways of directly transforming various kinds of energy into electric energy have a common scientific basis. They have no theoretical restrictions on the possibilities of the coefficient for transforming energy. For example, in chemical sources of current it amounts to 30-80 percent, and electrochemical generators--60-90 percent. The very fact of the production of electricity from energy of external physical fields (energy of chemical transformations, solar and thermal radiation) makes it possible to obtain extensive information about external energy manifestations. On this basis today we are constructing not only electric generator devices, but also numerous sensors and systems for transforming information which are extremely promising for application in cybernetics.

Production of Electric Energy From Chemical Transformations

Each year the world produces more than 10 billion autonomous sources of current (galvanic cells, batteries and so forth) and other energy-generating

devices (solar batteries, thermal electric generators) which consume many tons of thousands of tons of high-grade materials which are also in short supply. Even a partial savings on these materials, labor expenditures and energy for their production, with such mass output, is an extremely effective factor in the intensification of the economy.

Under the 11th Five-Year Plan the Ministry of the Electrical Equipment Industry began simultaneously at two plants industrial assimilation of a series of effective new galvanic cells of seven kinds, with an all-Union electrolyte, within the framework of the standards of the International Electrical Equipment Commission. The new products in the basic equipment for their mechanized production have been developed by a group of scientists and specialists of the All-Union Order of the Labor Red Banner Institute of Sources of Current. The special technological equipment created for its mass production is original and has no analogues abroad. Along with the two plants of the Ministry of the Electric Equipment Industry, two plants of machine-building ministries have also begun to produce effective sources of current. In 1984 all of them together produced more than 120 million units and in 1985 -- about 190 million. The new galvanic cells consume one-third to one-tenth of the ordinary amount of basic materials: manganese dioxide, zinc, copper, iron and so forth. Additionally, the initiation of the act of electrolyte exchange reduced thermodynamic losses and led to a higher coefficient of utilization of materials per unit of electric energy produced than with traditional galvanic cells. The design was simplified: the new cell uses only four simple parts.

In order to satisfy the needs of the national economy for sources of current for mass consumption, by the year 1990, with the old list of numerous products and the old design, it would be necessary to produce about 3 billion galvanic cells based on 11 technologies using more than 100 kinds of equipment and to construct new plants accordingly. The development of the new design and technologies of the system of unified cells reduces the demand for the very quantity of sources of current to one-third and reduces the list of kinds to one-sixth, because of which it is possible to satisfy the population's needs by producing not 3 billion but only 1 billion new unified sources of current.

During the past 3 years the aforementioned sources of current were again modernized and a method was developed for restoring (accumulating) energy in them up to 30 cycles, which in a number of areas of application increases the effectiveness of their utilization another 30-fold (in terms of economization on materials, energy and labor expenditures). It is important to emphasize that these modernized sources of current are extremely effective for accumulation of energy from solar radiation in them with the help of photoelectric cells. Experimental stations for atomic energy supply, which include solar electric power stations and new high-voltage galvanic cells are already operating successfully in regions of Siberia and the Far East.

The changeover of the branch to mass production of modernized sources of current, which should be completed under the 12th Five-Year Plan, will provide for an annual savings of more than 24,000 tons of manganese dioxide and 2,000 tons of zinc, 10,000 tons of tin plate, 700 tons of copper and more than 70 million norm-hours of working time, and it will conventionally release about

2,000 people in the branch. It would seem that this development should be regarded as one of the large achievements of the Ministry of the Electrical Equipment Industry in the sphere of intensification of production technology. Under the 12th Five-Year Plan it is intended to complete the second level of automation of the production process, which will increase its effectiveness for economizing on labor expenditures even more. Under the forthcoming five-year plan the branch will replace 20 items with three types of new variation of designs.

A comparison of the economic indicators of the production of the sources of current we mentioned above, for example, with products of one Japanese firm which offer the Soviet Union a license for the production of similar alkaline cells, along with the equipment used for advantages of the Soviet development both with respect to the duration of operation of the current sources themselves (1.5-fold) and with respect to labor productivity (3.9-fold). The 15-year priority from the time of the creation of the first models of the source of current of this series has not yet been surpassed by a single one of the foreign firms. The Soviet side has sold licenses and equipment for the new technology to Hungary, Yugoslavia and other countries.

As a result of the expenditure of materials and labor resources the economic effectiveness of the new designs for galvanic cells and batteries will exceed 50 million rubles a year (with the level of output planned for the end of the 12th Five-Year Plan). About 10 percent of this sum will be obtained as a result of mechanization (reduction of labor expenditures). The remaining 90 percent will be obtained as a result of reducing expenditures of materials, introducing new technologies and so forth, which are the result of fundamental research.

Electrochemical Generators

New prospects which correspond to the future level of technical capabilities in economizing on materials, electric energy and fuel, are opened up with the creation and assimilation of the production of electrochemical generators (EKG) which are intended for utilization in transportation energy engineering (electric cars, electric carts, and so forth).

As distinct from the traditional sources of current, in electric chemical generators for producing electric energy, they use as reagents not metals or metal compounds but substances that do not conduct electricity which are considerably less expensive and more available: hydrogen, oxygen and compounds that contain hydrogen. Therefore these generators, providing for continuous production of electricity from gaseous products of reaction, have extremely low material-intensiveness as compared to the classic batteries and galvanic cells—several times less than with batteries and hundreds of times less than with galvanic cells. For example an EKG using hydrogen and air created in the USSR 4 years ago has no analogues in the world yet. An electric car using hydrogen and air was exhibited at the All-Union Exhibition of the Achievements of the USSR National Economy. It runs for 150 kilometers without refueling, and replacing the hydrogen tank takes 2 minutes. Other effective systems for transportation energy engineering are being developed on the basis of this.

Electricity From the Energy of Solar Radiation

For about 12 years the USSR has been operating more than 170 small solar electric stations with an efficiency factor of 10 percent and more than 700 thermal electric power stations with automated accumulation and expenditure of electric energy. The solar batteries were made on the basis of single crystal silicon and therefore they are considered expensive although in those remote areas where they are operated the proportional cost of their electric energy is considerably less than the cost of electric energy obtained from gasoline generators with the corresponding capacity.

During recent years the volume of research for reducing the cost of solar batteries has increased sharply. The USSR was the first in the world to develop and introduce into production a heterostructure made of a new semiconductor material with an efficiency factor of 20-22 percent that sustains concentrated luminous fluxes up to 1,000 times. The new technologies for producing solar batteries contain prerequisites for reducing the cost of electricity production by a factor of 25-30. Taking into account the fact that the duration of ground operation of solar electric power stations is practically unlimited and the ecological cleanliness is irreproachable, these works are used as a basis for the creation (with satisfactory savings) of larger solar electric power stations both on the ground and in space. The question of creating inexpensive means of accumulating and storing electric energy is on the agenda.

The development of flexible automated lines for producing photoelectric cells from the gas or liquid phase with computer control in the organization of feedback through computers with monitoring of the results of the process comprise the basis of technological problems facing scientists who are engaged in this important task. In spite of the technological difficulties, this work is being encouraged throughout the world. The USSR envisions the development of plans for "solar houses" for rural regions of Krasnodar Kray, Rostov Oblast, and the Georgian SSR, and solar water-raising installations for the Turkmen, Kazakh, Uzbek and Kirghiz SSR's.

Two alternative variants have been selected for promising developments: the creation of a fully automated mass production of flat modules of solar batteries that use direct and diffused solar radiation and the development of solar modules with concentrators that make it possible to increase the density of direct radiation falling on the surface of the solar elements by a factor of 500-1,000.

The latter variant, which we developed and introduced under the leadership of Academician Zh. I. Alferov, required the creation of a new theory of transformation of superhigh radiation flows into electric energy and the development of special multilayer semiconductor structures. Recently we have managed to manufacture and successfully test new solar cells with linear or superlinear dependency of the generated current on the lumination. The goal of the work is to reduce the production cost of the electric energy that is obtained to amounts that are close to the cost of atomic energy.

A considerable reduction in the cost of "solar" electric energy can be expected as we expand the production of solar cells using the technology for continuously obtaining a fine silicon tape made of melted material.

Thermal Electricity

A large savings on materials when producing electric energy with autonomous sources can be provided as a result of applying semiconductor thermal batteries with solar, gas or liquid fuel heating. The USSR has developed designs for such batteries with an operating life in excess of 10 years. Here the expenditure of materials on the production of 1 kilowatt hour of electric energy is 1/700th the amount with batteries and several thousand times less than with galvanic cells. Unfortunately, the introduction of thermal electric and photoelectric transformers into production is taking place at slow rates because of departmental barriers.

The Effectiveness of Fundamental Research

A predictable question: What is the effectiveness of the fundamental research that lies at the basis of the production of autonomous sources of current? The utilization of semiconductor equipment and technology in the world has produced and is producing billions in dividends for foreign firms. This is quite comparable, with the effect from the utilization of atomic nuclear energy for producing electricity. At the sources of the initial fundamental research in both cases were just a few scientists. In our examples the idea of utilizing the photoelectric effect for producing electric energy was developed by Academician A. F. Ioffe (1932). The design and the new technological idea of mass production of alkaline galvanic cells were suggested by the engineer F. Kh. Nabiullin. As always, the initial ideas were subsequently developed by enthusiasts, coauthors and workers, but the economic effectiveness of the initial creative thought is immense. If one compares it to the savings of an industrial enterprise of an average level in rubles per 1 ruble of production expenditures, one must admit that individual scientists and creative working collectives have an effectiveness that exceeds expenditures on research thousands of times over. Such economic prospects are associated only with the work of outstanding scientists, good scientific collectives, and with a good and delicate algorithm of the control of the entire process of "fundamental research-technology-production."

The Scientific Production Association--The Best Organizational Form of Ties Between Science and Production

In the preceding section we named only a small number of research and development projects that have been carried out in the past 10 years by scientists of the All-Union Scientific Research Institute of Sources of Current. The fairly high rate of realization of the results of the research depended largely on a reduction of the cycle "Scientific Idea-Technology-Production." For 6 years our collective has been operating as a part of a scientific production association. The NPO includes two institutes, three experimental plants, one design bureau and a number of laboratories at plants. According to the documentation, the NPO operates eight plants of the branch. It is precisely the structure of the scientific production association that

has made it possible to rapidly assimilate the latest technologies and the production of solar batteries to be used on the ground, the production of electrochemical generators and a number of other items, individual examples of whose application are presented in this article. The structure of the NPO provided for satisfactory growth of the volume of NIOKR--during the past period it has more than doubled, while the number of personnel has increased by 19 percent, and the volumes of industrial output have increased by 85 percent. During past years the NPO has completely fulfilled its annual plans for NIOKR and production plans.

But it is not only the indicators that have been cited that should determine the criteria for the activity of such an economically effective structure as the NPO. It is necessary to take into account that all products of the NPO are the latest products created in the USSR. In a number of cases these products are being created for the first time in world practice. Thus among the latest technologies in the world is the technology for producing electrochemical generators, solar batteries and improved chemical sources of current.

A number of ministries are not developing NPO's sufficiently and are doing little to improve the structure of management. The two-unit structure of management has not been introduced and the three-unit structure (ministry VPO--NPO) sharply reduces the independence in making scientific and technical decisions and correspondingly affects the effectiveness of the activity of the NPO.

The growth rate of the most effective organizational form which reduces the cycle "Science-Production" still does not correspond to the crucial nature of the problem. There should also be further improvement in the methods of encouraging enterprises that introduce new technical equipment. The actually existing slow rates of introduction which do not depend on the scientists reduce the interest of scientific collectives to a minimum. It is necessary to eliminate restrictions for contributing to the introduction of inventions on managers of enterprises that introduce new technical equipment since these restrictions impede scientific and technical progress. It would apparently be expedient for the USSR State Committee for Inventions and Discoveries to develop a scale of bonuses not only for the authors of inventions, but also for scientific collectives in which these authors invent and introduce things, especially for highly effective development with savings of more than 100,000 rubles. There is now an upper limit on the honorariums for authors of inventions, regardless of the amount of the savings. And the authors of the inventions, as a rule, do not receive the maximum sum envisioned by the existing provision. Therefore it is necessary to study and eliminate factors that infringe upon authors' rights.

Indicators of the effectiveness of the NPO should, in our opinion, reflect the effectiveness of the utilization of its products in other branches. But the corresponding provisions have not been developed with respect to NPO's in our country. There are also unutilized organizational possibilities of accelerating the cycle "Science-Production" in the creation of comprehensive brigades consisting of scientists from the USSR Academy of Sciences and workers in industry (NPO).

Recent party decisions have insistently drawn the attention of scientists to the most rapid utilization of the results of fundamental research in order to create practically new technologies and productions, having in mind that this path is the basic one for intensification of the economy. They have published a number of directive documents directed toward reducing the cycle of "scientific research-production." But many ministries have not yet created structures that are capable of resolving the tasks that have been set. Such structures, in our opinion, are large NPO's.

REFERENCE: Izdatelstvo "Nauka", "Ekonomika i organizatsiya promyshlennogo proizvodstva", 1986

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REALIZATION OF RESEARCH DEVELOPMENTS QUESTIONED

Novosibirsk *KHONOMIKA I ORGANIZATSIYA PROIZVEDENIYA (EKO)* in Russian No 7, Jul 86 pp 31-35

(Editorial commentary: "There Are Developments, But Where Are the Items?")

[Text] The All-Union Scientific Research Institute of Sources of Current is working in an area of science and technology whose influence on scientific and technical progress, on the national economy and on the satisfaction of the cultural and domestic needs of the Soviet people increases each year. It is no accident that our age is called the age of autonomous energy. Without it modern medicine and the latest systems of measurement, aviation and space travel would be unthinkable; it would be unthinkable to assimilate the depths of disease, the deserts, the northern latitudes, mountainous regions and regions with difficult access. The world economy shows that every country tries to have his own source of energy. The autonomous energy makes it possible to have a supply of energy directly at one's disposal. Even under ordinary conditions the demand for it is increasing. Many people prefer to operate radios, tape recorders and other complicated household items not with the electricity network, but with autonomous sources of current, striving to ensure themselves against interference and fluctuations in current. Scientific and technical progress is pushing the sub-branch forward and forcing it to develop at more rapid rates and contribute to raising the technical level of products of other branches.

Thus the situation with the introduction into production of highly effective new alkaline sources of current seems even more surprising. So far these have not been surpassed by a single foreign firm, as the corresponding member of the USSR Academy of Sciences N. S. Litvinenko writes in his article. But with the priority of their creation, why has the Ministry of the Electrical Equipment Industry not developed mass production of these in the past 15 years? Why has work on fundamental reconstruction of the production of batteries not become widespread? After all, the quality of batteries does not meet the standards, and the volume of production lags significantly behind the demands of the national economy and domestic consumers. Why are other scientific developments being assimilated so slowly? The editorial staff asked these and several other questions of people who had once been leaders of the sub-branch of the VPO Soyuzelektroistekhnika.

"We shall not answer verbally," categorically announced V. I. Moiseyev, who headed the NPO at one time.

"We request that you submit the questions in written form and we shall study them and try to give you an answer," Deputy Minister V. G. Subachev, who is in charge of the work of the sub-branch, responded more politely.

During these months when the "study" of the questions was being conducted leaders of the sub-branch and Deputy Minister V. G. Subachev were removed from their positions. But the arrears of the sub-branch had been forming for some time. The unsatisfactory management of this branch in the recent period had only exacerbated the negative tendencies, and it is necessary to mention these.

A considerable number of the enterprises of the sub-branch were created in prewar years. Some of them appeared during the evacuation of enterprises from the European part of the country to the Eastern regions. After the war, the plants returned to their home locations, but the production remained in the East. After the war practically no new enterprises were constructed and there were not sufficient investments in reconstruction and technical renovation of existing enterprises. Because of the time that had passed the sub-branch lagged behind the needs of the national economy.

Recently the Ministry of the Electrical Equipment Industry has begun to pay a little more attention to enterprises that produce sources of current. For the 12th Five-Year Plan there was a considerable increase in capital investments in technical renovation and development of the sub-branch. But the capacities will be transformed and increased by the year 1990. Consequently, they will be in operation under the 13th Five-Year Plan. This is why the country will not be able to receive a sufficient quantity of new galvanic cells until 1995.

The manufacturing plants have many problems with the alkaline cells because of the fact that they have not solved the problem with the raw material base. First and foremost it was necessary to organize the production of the basic component--electrolytic manganese dioxide. The Azot Production Association of the Ministry of Mineral Fertilizers in Rustavi began to do this. The production is not within the profile of the enterprise, there is no interest in it, and there are no specialists. As a result, the quality of the electrical manganese dioxide (LDM) is extremely poor. No sooner had the new cells been put up for sale than they received severe criticism. Their quality was tested by many levels right up to the USSR People's Control and Procurator's Office. Recently the quality of the raw material has improved somewhat, but the Rustavi PO has not yet solved all of its problems and is in need of additional attention from the ministry.

The need for the remaining components of the raw materials of the new alkaline cells are not being fully satisfied.

The problem of raw material is also crucial in the production of other items, for example, batteries. Up to this point batteries are being produced in mass quantities using ebonite monoblocks, although we should have changed over to propylene monoblocks long ago. Ebonite blocks are considerably thicker and

heavier. But the chemical industry promises to cover only part of the need of the sub-branch for polypropylene. The remaining batteries, up until the end of the five-year plan, will be produced in ebonite monoblocks.

Or take the highly effective separators for batteries. An insignificant complex material. But the chemical industry does not provide it. The All-Union Scientific Research Institute of Synthetic Resins (City of Vladimir) is failing to meet the deadlines agreed upon for completing the development for polyethylene separators.

The sub-branch is part of the fact that about 65 percent of the batteries have been certified for the State Emblem of Quality. But an inspection by the people's control agencies has shown that the Emblem of Quality is being conferred illegally. The Gosstandart has removed it from 17 kinds of batteries. Penalties have been imposed for producing poor-quality products on the managers of the Taldy-Kurgan, Kursk, and Leningrad battery plants. Thus we have the task not only of assimilating the new battery equipment, but also significantly improving the quality of the traditional equipment.

The Basic Directions for the Economic and Social Development of USSR During 1986-1990 and the Period Up to the Year 2000 sets the task of comprehensively economizing on fuel and energy resources and expanding the utilization of nontraditional renewable sources of energy. The Institute of Sources of Current has a scientific stockpile in this area, but the branch is not working sufficiently on utilizing it. The sun is a practically inexhaustible source of ecologically pure, noiseless energy. It is not surprising that throughout the history of mankind people's gazes have always been directed toward the energy of the sun. The achievements of the scientific and technical revolution make it possible to actually resolve the problem of its utilization.

But the devices that accumulate solar energy are still quite costly since they are made on the basis of single crystal silicon and their efficiency factor is not high enough. How does one reduce their costs and increase the efficiency factor--this is a problem which is awaiting a solution. In order to organize series production of installations for solar energy which have a commercial advantage, we need principally new technologies, for example, for obtaining thin film thermal elements to replace single crystal silicon wafers. This area is being developed in conjunction with the scientific research institutes of the Ministry of Nonferrous Metallurgy. A synthesis of film large block structures and amorphous silicon films is promising; work on this is being conducted in conjunction with institutes of the USSR Academy of Sciences and the Ministry of Nonferrous Metallurgy.

In electric energy for means of transportation great hopes are being placed in electrochemical generators using hydrogen and air. We created such a generator before other countries did. But as a catalyzer for the chemical processes in these generators we use platinum, which immediately placed restrictions on their production. There arose the problem of replacing the catalyzer with a less expensive one.

Electrochemical generators can pay for themselves in devices for accumulating energy, in computer networks, and in systems of measurement for avoiding interruptions in processes that are being carried out.

Scientific and technical progress, while raising the level of the sub-branch of autonomous sources of current, should also raise the level of the consumers. There have been large losses in electric circuits, electric engines and tape advance devices of tape recorders. Because of the imperfection of the design even the rewinding of the tape in tape recorders requires excessive expenditures of energy. The need for energy can be reduced when the items are being improved.

The sub-branch produces a wide range of items: from miniature galvanic cells the size of a small button (without them it would be unthinkable, for example, to have electronic watches) to accumulator batteries weighing several tons for atomic electric power stations. Their total capacity is much more than the introduction of new capacities by the Ministry of Power and Electrification. But such an unexpected ratio should not cast a spell over us. Those capacities which will be introduced by the Ministry of Power and Electrification will be kept in operation for decades and will gradually be increased and accumulate. Autonomous sources of current serve for tens, hundreds and thousands of hours and after that they are exhausted. They must be restored. Thus it is even more important to economize on their utilization. But it is also even more necessary to accelerate the assimilation of effective new alkaline galvanic cells that are being created in the Institute of Sources of Current. The institute has now been transferred from the sub-branch to the jurisdiction of the technical administration of the Ministry of the Electrical Equipment Industry. One must assume that the conditions will be improved for realizing its developments. The branch will pay more attention to it. The minister of the electrical equipment industry Yu. A. Nikitin, who is in charge of questions of science in new technical equipment in the branch, promised that he would comment on the new situation in the work of the institute. Unfortunately, he has not yet had time to keep his promise. We must hope that the branch will respond as quickly as possible to this article.

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CSO: 1820/199

FUNCTIONS OF PERSONAL COMPUTERS RELATED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 7, Jul 86 pp 35-42

[Article by Article by Yu. P. Voronov, candidate of economic sciences (Novosibirsk): "What Is a Personal Computer?"]

[Text] The documents of the 27th CPSU Congress set the task of accelerating the development of the output of personal computers. The efforts of labor collectives that produce personal computers are not sufficient to carry out this task. The new kind of computer is penetrating into all spheres of production activity, daily life, education, culture, and public health.

It is not enough simply to produce thousands and millions of personal computers: it is necessary to create favorable conditions for their utilization and to prepare future users for this. We are speaking primarily about psychological preparation. Up to this point, not so many people know what a personal computer is and where it can be used.

A no less difficult task is to prepare the national economy for the use of personal computers and promptly include in the work of enterprises and economic organizations the ability to accept the capabilities offered by the new means of intellectual labor as fully and effectively as possible.

In the articles offered for your attention Yu. P. Voronov and G. R. Gromov touch upon the complicated complex of problems associated with mass introduction of personal computers during the course of the current five-year plan.

The name "personal computer" includes four types of computers: office, home, training and scientific research. All four types are similar in design, capabilities and even external appearance. Let us begin with the last.

When one sees a personal computer the first thing that catches the eye is the transistor television screen. And so it seems that this is the main part of the computer. But that is not so. The television screen is an external device of the computer, and the computer itself, which is the size of an encyclopedia, is located in such a way that one does not notice it immediately. It can be built into a television set if the size is increased somewhat. Additionally, the personal computer includes a keyboard and two devices--the external memory and the printer.

It sometimes happens that the computer itself is combined with the keyboard or the external memory device. The entire personal computer is placed on a desk and when it is put together as well as possible it occupies as much space as an electronic typewriter.

The most similar are home and training (teaching) computers. If one is to speak about models that are currently being sold abroad, these machines cost \$700 to \$1,000 (including applied programs--\$100 to \$200). The internal memory of these machines is 64 kilobytes (about 40 typed pages). The external memory is from 100 to 500 kilobytes (that is, from 60 to 300 typed pages). These machines are not very fast. Training machines are distinguished from home machines by the fact that they have somewhat greater requirements for the user and, of course, by the set of applications. At the present time in the United States for every personal computer that comes into the sphere of education there are five personal computers for home use. In our country, obviously, this ratio will be different: personal computers will be supplied first to VUZes, tekhnikums, vocational and technical schools and general educational schools. The program for introducing computers into the school was presented by the compiler of this program along the line of the USSR Academy of Sciences, Academician Andrey Petrovich Yershov (see, for example, EKO, No 2, 1985). The program envisions consistent expansion of the network of computer labs in the schools of our country. The goal of universal computerized education is to transform programming into a second kind of literacy so that each schoolchild will treat a computer as he does one of the natural, ordinary objects of daily use. In Western countries and above all in the United States the main hopes are being placed in extensive dissemination of home computers that are used for games, for reference, for housework, for processing the texts of letters and statements, and so forth. The volume of sales of these machines in the world should reach tens of millions per year. The market for home computers, according to predictions, will be comparable to the market for private automobiles. To be sure, these predictions have not been justified yet.

The basis of the market for personal computers is still machines for office work. The typical size of the internal memory for machines of this class is 256 kilobytes (roughly 120-150 typewritten pages), and the external memory--0.5 to 1 megabyte, that is, from 250 to 900 pages. The cost of office (institutional) personal computers is approximately 3-5 times as great as that of home and training computers, including the applied software--7-10 times. The increased cost is explained by the fact that personal computers in offices contain the archives of documents with the storage in the machine's memory of all documents that are suitable to be printed, automatic construction of graphs and diagrams. Personal computers for offices, as a rule, are capable

of being combined into a unified network that it is possible to send a document from one work position to another without putting it into print. The most popular office personal computers now are from the firms Apple and IBM. In our country there is a model of an office personal computer which has long been assimilated into production--the Iskra 226. The next in line will be the extensive introduction of the Agat personal computer which will be used both in training and in office work.

In the opinion of specialists extensive introduction of office personal computers into our institutions is being held up not so much by the capabilities of production as by the lack of preparation of the basic mass of employees and engineering and technical personnel for using them in their current activity.

Incidentally, there are also various kinds of preparation that are lacking. When one says that a personal computer is oriented toward the untrained user one means mainly a sharp reduction in the demands for preparation as compared to work with universal computers of the third generation when the user was separated from the machine by a programmer and an operator. The requirements for qualifications are reduced when changing over to the work of the user at the terminal, when the operator is eliminated and the functions of the program are narrowed. For professional personal computers there has already been one intermediate stage in the reduction of the requirements placed on the user--the so-called "Professor" computer. Anticipating professional personal computers, they pass through the world market almost unnoticed and domestic industry did not have a chance to react to them. By now "Professor" computers have been crowded by personal computers.

Externally, the "Professor" computer reminds one of a teletype with an expanded keyboard, with an indicator of the type of "running line" added, and with a small television display established on top. The main merit of "Professor" computers is obviously the overcoming of the psychological barrier between computer equipment and the large army of rank-and-file scholarly researchers.

The author of these lines managed within a year in the evenings 1 or 2 hours a day to work on a "Professor" computer of Italian production, the Olivetti R6069. For the content of the work there was no need to do calculations--it was only text processing: literary and semantic editing, entering and removing words, sentences and whole paragraphs, and changing the sequence of pieces of text that had already been composed.

From this small amount of experience one can draw a basic conclusion: writing on a "Professor" or personal computer is different from writing with a pen and paper. The differences pertain not only to the external aspects, but also to the very style of work with the text. For instance, moving a paragraph from one page to another is quite permissible by the "cut and paste" method, that is, using scissors and glue. But once this is done a couple of times the article becomes an unreadable rough draft that is stiff from the many times it has been glued. Therefore even when moves the paragraph the first time one has in mind that there cannot be many of these operations. This limits the possibilities, but at the same time it disciplines the writer.

But now, having become accustomed to working with an impediment that holds you back so much, you receive an instrument with which you can see a clean copy of an edited text at any time. At first you simply amuse yourself with this, printing intermediate copies, even when common sense says they are not necessary. But then the ease of making corrections plays the following trick on you: you make them whether they are needed or not, distracting yourself from truly serious work. Only a month later is the necessary balance established between the machine's capabilities and the editor's needs.

The personal computer can produce an especially great leap in productivity when compiling bibliographies, dictionaries, reference works and indexes. The main area for "information-bibliographic" utilization of personal computers will most likely be the preparation of an information base for self-education and training, mainly through correspondence. Initially the user selects certain titles of books and articles and then makes abstracts of them which are then transformed into a combined text devoted to the subject under study. Such machine abstracting is much better for assimilating material than reading the text of lectures or the text of a book, and it introduces an active element into training.

The most complicated and expensive are personal computers intended for scientific calculations. They cost twice as much as office computers and the capacity of the main memory is a half a megabyte, and the external memory--5-10 megabytes. A considerable part of the cost of the machine is the cost of applied programs, the packages being specialized for various kinds of scientific research. The utilization of personal professional computers in scientific research activity increases the labor productivity of the scientific associate primarily through keying into the personal computer routine operations of processing text, constructing graphs and so forth. Of course the personal computer will play no small role in accelerating the calculations. The proximity of the computer device to the user makes it possible to considerably increase the number of variants that are considered.

But the personal computer for scientific calculations is also characterized by the fact that they are not oriented toward the untrained user. It is precisely this feature that distinguishes personal computers from other kinds of computer equipment.

In the second issue of the magazine MIKROPROTSESSORNYYE SREDSTVA I SISTEMY for 1985 an announcement was published of the first domestic home computer, Elektronika BK-0010. The first batch of these machines was sold through the Leningrad and Minsk Elektronika stores at the beginning of 1985. The home microcomputer is intended for engineering and mathematical calculations, for the creation of various kinds of information and research systems (catalogues, reference works, notebooks), for studying foreign languages, for entertainment programs, games and so forth. Initially the Elektronika BK-0010 computer cost 840 rubles. It is intended to reduce this price to 550-600 rubles. It is quite possible in the future to reduce this price to 150-200 rubles.

The speed of the Elektronika BK-0010 is 300,000 operations per second and the size of the memory is 16 kilobytes. The memory can be expanded to 28

kilobytes by using part of the memory device that is intended for the screen (display). The only external device the computer has is the keyboard within which it is located. It can be hooked up to any television set which has "video" input and a domestic cassette tape recorder. The television set performs the functions of a display and on the tape recorder one can record sufficient quantities of information that are not necessary for current work.

The conditions for the utilization of the personal computer coincide with the ordinary conditions for the operation of household equipment: television set, radio, washing machine. The purchaser, when acquiring it in a store, reads the instructions and begins to operate it without programmers or operators. If it malfunctions he goes to the repair service: a workman comes to the home or the personal computer is put into a repair shop.

The television set that is part of the computer is called a "display." This word existed in the English language long before computer equipment did and has been translated: exhibit, demonstration. The replacement can be explained: "Tele" in the word "television" means "far," and the computer displays what is right there. The second part of the word also dropped away. Now the word "display," even in the English language, more frequently means "computer screen" than it does "exhibit" or "demonstration."

There is another reason why the display cannot be called a television set. In many personal computers (with the exception of home computers) there is no television presentation of the video signal. The television standard developed to increase the stable transmission of the picture turns out to be uneconomical when there is neither transmission nor reception. Therefore for many applications personal computers use their own scanning systems. But when a personal computer is acquired for the family, the purchaser agrees to pay a little more if the display of the home computer can also be used as an ordinary television set. Taking this into account the domestic home computer, the Elektronika BK-0010 uses an ordinary transistor television set for a display.

The external memory of the personal computer is offered in two varieties—on floppy disks and on a domestic cassette tape recorder. The selection between these is again determined by the sphere of application of the computer. Under household conditions it is best to use a tape recorder and at work—floppy disks. The capacities of these devices depend strongly on the type of tape recorder and disk drives that are used, and the sizes also vary a great deal—from the size of a personal suitcase to a slot in the same display where one is to place the disk on which it is possible to record almost a megabyte of information.

A typewriter is rarely used for printing. These are replaced by dot-matrix printers which are capable of producing not only symbolic, but also graphic information.

The world capitalist market for personal computers is now divided among a few large firms. Three-fourths of the sales of personal computers, if measured in units, go to four firms: Commodore, Texas Instruments, Apple and IBM. The most widespread have been personal computers of the Commodore firm which

distributes on the market relatively inexpensive computers for home and school. These machines have played the role of a kind of bridge between television games and more complicated technical devices for which the rank-and-file consumer is willing to pay his own money. While in terms of quantity the machines from the Commodore firm comprise more than one-third of the personal computers that are sold, in terms of value the firm accounts for only one-12th.

The firm Texas Instruments produces various kinds of specialized personal computers for business accounts and engineering activity. The IBM has a popular personal computer for scientific calculations--the IBM PC. When they were just beginning to sell it they had hopes of extensively introducing the personal computer into household work and daily life. But three-fourths of the IBM PC's were purchased by programmers in order to write programs at home for other computers. In terms of total value of sales the IBM PC holds first place, but in terms of quantity--fourth place.

The most widely known firm that produces personal computers is now the Apple company. Sometimes personal computers are completely equated with products of this firm, which is incorrect. The two engineers who formed the Apple firm actively utilized Western propaganda to demonstrate the capabilities of the simple enterprising individual. According to the version offered by the American press, the first Apple computer was put together in a garage. This popular image of the future millionaire, the worker in his garage lost in his work on a technical innovation, has been exploited since the time of Henry Ford Sr. The legend is intended for ignorant people. To be sure, from the hatching items now available on the market any good young technicians' club could manufacture a computer. The difficulty lies in forming the nucleus of the system software. In this the two engineers playing the game of chance indeed did succeed. But the garage had nothing to do with it. It is simply that the initial ideas that were proposed turned out to be indeed successful for constructing systems software for the personal computer that was intended for the untrained user. In 1983 the Apple firm held 14 percent of the world market of personal computers in terms of value and 11 percent in terms of quantity. The first model, the Apple I, is considered to be unsuccessful and almost nothing is known about it. The Apple II model made a burst forward, and this is what brought fame to the firm. The next model of personal computer produced by the firm has a trademark Lisa, and it was also a commercial failure. The expanded set of functions for office application was not received by the market because of the relatively high price. The new series of personal computers of the Apple firm has the name of MacIntosh and is considered to be a success.

Relatively recently the DEK firm came onto the personal computer market. With rich experience in the development of software for minicomputers. According to predictions it is capable of essentially crowding out competitors who now hold firm positions on the market.

The wave of personal computers, in terms of its scope, is significantly exceeding all previous waves of computerization. Its influence is not limited to the sphere of technology, the organization of production or scientific and technical calculations. They will enter our daily life such as in automotive

transportation, television and tape recorders. It is necessary to be prepared for this.

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POSSIBLE DRAWBACKS OF COMPUTERS SUGGESTED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 7, Jul 86 pp 43-50

[Article by G. R. Gromov, candidate of technical sciences, responsible secretary of the magazine MIKROPROTSESSORNIYE SREDSTVA I SISTEMY (Moscow): "Caution: Computers!"]

[Text] Today a good deal is being said and written about personal computers (PEVM's). Some people see in them an instrument for increasing labor productivity for people employed in institutions, design bureaus and scientific laboratories. Others see a simple-to-operate, universal, flexibly adapted instrument for controlling shop-automated equipment, and "informational nucleus" for systems like the GAP, ASU, TP and so forth. Finally, now almost everyone agrees in one form or another that it will be practically impossible to train the future generation of graduates of secondary schools, GPTU's, tekhnikum and VUZes in an era of universal "computer literacy" without personal computers.

It took more than 5 years of energetic efforts for the understanding of the critical need for mass production of "machines for individual processing of the information" as personal computers are sometimes called to be implanted in public awareness: the organization of all-union conferences and regional seminars, the publication of books, the delivery of lectures and articles in the press. But then....

Then the cautiously negative attitude toward personal computers ("Who needs this electronic toy?"; "We do not have time to play games") was suddenly replaced by a special form of "personal computer euphoria" which was considerably more dangerous to the success of the matter. Plant and entire ministries began to compete zealously in their predictions for the output of tens and hundreds of thousands of personal computers which, as it turned out, they were prepared to begin producing immediately (of course, if they were allotted the corresponding funds for precision equipment and other resources that were in critically short supply). At the same time articles in the press were shot through with announcements of expected two- and three-digit figures of the increase in labor productivity from the introduction of personal computers the new "miracle machines"....

But still how pleasant and sweet it is to live during those very happy moments of anticipation of a miracle! None of the difficult problems are pressing on one's shoulders yet, or they do not seem so painful. All one need do is wait a little while. A couple of years...and there will be plenty of these iron "problem-solvers" and everything around will become, as in the song, "blue and green." One can read about this (without any irony at all) even in authoritative scientific publications, for instance "an inexpensive personal computer is suggested which will resolve...social problems" (abstract journal of the VINITI of the USSR Academy of Sciences and the USSR State Committee for Science and Technology, series "Automation Equipment and Computer Technology," No 5, 1984, p 39).

About 5 years ago in a similar situation, which arose at the time at the level of the ASU, the director of one of the institutes of the Novosibirsk Akademgorodok figuratively, knowing about the local weather conditions, explained to his colleague who was looking joyously at a long-awaited schedule order for a computer: "You are like a person out in the freezing cold who has had warm water poured down his neck. At first you are warm, but...."

Today, when the attitude toward the "personal computer phenomenon" at all levels of management of the national economy has sharply "changed signs," it is necessary to change the tone of the discussion of the problem just as sharply. It is necessary as quickly as possible to turn away from the sparkling literary outbursts in the press vividly describing the future advantages of the introduction of personal computers, which are inevitable in the stage of fighting for public interests in the problem, to a sober, even-handed evaluation of the real volume of work which will have to be done in the immediate future in order for the total economic effect from the planned large-scale introduction of personal computers not to turn out to be negative under the 12th Five-Year Plan.

According to the apt remark of Academician A. P. Yershov, the most reliable method of closing one's eyes to the difficulties of future problems is to regard the personal computer simply as a smaller version of the traditional "large" computer. Although at the present time "direct" work of the specialist with the machine is becoming more and more widespread, still computer equipment is linked in the mind of the average person with the computer center and a considerable number of service personnel. Personal computers intended for the individual user do not eliminate programmers as such. Just as universal literacy does not remove the need for philologists, universal computer literacy does not reduce but, on the contrary, increases the need for highly skilled programmers.

At the same time, with production volumes in the hundreds of thousands and even millions of personal computers, one cannot count on having a professional programmer next to each of them. And it is even more unrealistic to count on having stable service personnel for computers--operators and repair workers--since the personal computer is oriented toward direct work with the user. Moreover, when millions of machines are produced each year there will be simply no place to find this quantity of service personnel.

The Service Network

The economic advantages from introducing personal computers into any of the aforementioned areas of professional applications are only potential advantages. Whether or not the many billions of rubles spent on purchasing and producing hundreds and thousands of professional computers will produce the expected increase in labor productivity depends on a whole number of scientific, technical and socioeconomic factors, but first and foremost on whether or not the computers that are developed will work.

As distinct from all other types of computers, whose operation presupposes the existence in the organization that acquires the machine of a brigade of service personnel (engineers and technicians--electronics experts, programmers and so forth), personal computers are oriented mainly toward the so-called "nonprogramming professionals"--specialists of the national economy who are interested in using computers but are unfamiliar with the machine. These specialists who are "one on one" with a computer do not want to know anything about servicing it. Therefore the manufacturers can no longer shift to the shoulders of the users even a small part of the burden of keeping their item operable.

At the same time, it sometimes make no difference to the user how one provides for the high level of readiness of the professional personal computer for daily use: through the production of highly reliable components that require almost no repair or a developed network of operational technical support for the computer by the consumer. For example, with a telephone call it is possible to diagnose and replace in a couple of hours a block or component of a personal computer that is broken down. In foreign countries, in order to achieve the coefficient of operational readiness of personal computers that is set by the conditions of competition on the world market, each firm has its own economically optimal balance of funds expended in production for increasing the operational reliability of the personal computers, on the one hand, and the development of a firm system of service after the sale, on the other.

For an approximate estimate of the amount of necessary resources consumed by the computer service network one can use the example of the two largest American computer firms--IBM and DEC: At the IBM firm about 10 percent of the overall number of workers are employed in service work (more than 35,000 people) and at DEC--about 25 percent. The greater the reliability of the item, the less, correspondingly, the load on the network of technical service enterprises and vice versa. But in this case a considerable difference in the load on the service network is determined to a considerable degree also by the circumstance that the DEC firm produces main mini- and microcomputers which are used directly in offices for controlling technological processes, scientific experiments and so forth. That is, in places where it is necessary to have considerably more efficiency in service.

The level of service and the reliability are the main parameters by which the "natural selection" of personal computers takes place on the world industrial market today. This circumstance, in particular, explains to no small degree that that which is difficult to explain from the outside that, for example, in

the American industrial market users prefer personal computers of the IBM firm to dozens of compatible computers from competitive firms which offer less expensive personal computers with technical characteristics which, as a rule, are equal to and in a number of cases significantly superior to those of the IBM machines. The service network which has been created over decades explains everything. It turns out to be much more difficult to create an infrastructure for technical service than it is to organize mass output of microcomputers.

As was noted in the papers at the 9th International Congress on automated means of processing information (IFIP-83), the country, which is beginning a process of mass computerization, should concentrate material and technical resources on solving the main problem of this stage: creating and developing at more rapid rates an infrastructure for program and technical service for microcomputers.

Renting Computers

The difficulties in developing a ramified territorial infrastructure for technical service of mass items of new technical equipment, even if they are not as complicated as computers, are generally known. For many years now color television sets, refrigerators and passenger cars have provided journalists with shining examples of type of problem. The difference in this case consists, possibly, only in the fact that the hapless owner of a television set, tape recorder, motorcycle, refrigerator or Zhiguli will have to go, if necessary, through the newspaper to the ministry or through acquaintances to "Uncle Kolya," but he will not rest until the equipment which he has purchased by "his own blood" is restored to its previous working condition. At the same time, for a considerable proportion of the state fleet of microcomputers, which are still being produced by the plants without any indicators of any serious concern about developing a service network, the first time they break down means, as a rule, "eternal rest."

Under the existing conditions the rates of increase in the output of microcomputers should be determined not so much by the production capacities of individual plants or the branch as a whole to "drive up the gross output of computers," but by the economically substantiated synchronization of the growth of the annual volumes of their production with the rise in the level of consumer characteristics of the products that are produced: the level of operational reliability and completeness of the sets that are delivered, on the one hand, and the real capabilities of the branch to provide all the manufactured machines with skilled technical service, on the other.

The real load on the network of computer service depends first and foremost on the reliability of the machines that are produced. The management of the branch receives (with this method of assigning planning indicators) the possibility to maneuver internal resources: any technical decision which increases the reliability of computers thus creates the possibility for the plants of the branch to produce correspondingly more machines with the same expenditures on service.

With another approach to planning it becomes the legitimate norm to produce "homeless" computers which are not provided with service. A paradoxical situation arises here: the production plan includes precise sums of money which are intentionally lost for the state, which will then be spent (strictly according to the plan) on "silicon scraps" for warranty service for the doomed electronic machines.

What is economically significant is not the planned indicator that is registered today of the volume of production of computers calculated in billions of rubles (or hundreds of thousands of machines), but the fleet of computers that actually exists in the country. How within the framework of the existing indicators does one separate the "wheat from the chaff"--the unworkable machine from the existing fleet--and correspondingly reflect more precisely the effectiveness of the operation of the computer industry in the reported economic indicators? How does one link the economic well-being of each plant and the computer industry as a whole with the interests of individual organizations and branches that consumer computer equipment?

One of the most realistic organizational and economic solutions is rental.

At the present time, the user organization, as a rule, purchases its own computers and then, after the "purchase-sales" the document is completed, it independently roams through this "electronic property" however and as much as it can. All known, mainly legal, means of postsale pressure on the manufacturer for poor quality products or an effective service--complaints, documents and so forth--as experience shows, are not very effective because of a complicated set of reasons.

It seems that it will be possible to radically change the nature of economic relations of "manufacture-consumer" in the area of computer equipment only with the complete rejection of the existing mechanism of one-time calculations of the "purchase-sales" type and changing over to a system of payments for computer services that are spread out over time, that is, computer rental. This way the branch will receive money from the consumer and, correspondingly, be responsible to the state not for everything "dispatched to the consumer," but only for working machines. For the first time it will be possible to transfer money to the plants only for that part of their products which are working for the consumer at the given time and therefore it will be possible actually to influence the level of labor productivity in the consumer organizations.

How is this done? Enterprises of the national economy, having received funds for computers, will now no longer purchase machines for the full cost as has been done up to this point, but rent them from the branch that produces computer equipment. As long as the machine is functioning the rent for it will be paid. When the machine is no longer operable because of incomplete delivery or simple malfunctioning, the rent, naturally, not be paid until the item's ability to operate is restored.

Under these conditions, if one plant produces more complete sets of equipment which are more reliable than those of its neighbor, for example, naturally with a comparable annual production volume it will receive considerably more

rent from the consumer since there will be considerably rarer instances when the machines are not operating because they are waiting for batching equipment which is in short supply or for repair.

In the final analysis this will make it possible to create that economic pressure on the computer industry that is so necessary to force them to increase the reliability of mass models of computers and accelerate the development of the service network. For the first time it is possible to pay the manufacturing enterprise not for "computers in boxes" and not for the "document of start-up and adjustment," and not for the "computer repair," but for a working machine.

For technical equipment, obsolescence begins considerably before the physical wearing out does. Therefore the full time during which the consumer agrees to rent the given model and, correspondingly, the overall sum of payments to the plant for producing machines will be determined directly by the technical level of the design of the computer. The more advanced the data processing technology that is included in the architecture of the machines that are produced, the greater will be the period before they are obsolete and, consequently, the greater will be the overall sum of profit obtained by the plant from renting this type of computer.

After the organization of the branch responsible for renting the computers no longer receives orders for the given type of machine, a document of "complete obsolescence" of the item is registered.

The requirements on the technical level of data processing systems differ in various consumer organizations. Therefore it is apparently necessary to envision a situation where a consumer organization which has the funds for a given type of computer, for example, having rented it for more than a year, refuses to extend the rental agreement. The reasons can vary: having the opportunity to rent better computers, changing the profile of the work that is done, and so forth. Computers released this way go on to the "rental market" where an agreement is concluded under direct ties among the immediately interested organizations.

To this point computers, especially small computers of the mini and micro level for which the Central Statistical Administration does not (and cannot!) demand a report on loading, after the first breakdown can frequently gather dust for years somewhere in the basement and still be counted on the books of the enterprise until the time comes when it is permitted to write it off. During all this time it is formally going through the channels of state reporting as an operating unit of the computer fleet. It is apparently still impossible to estimate how many of these "dead computer souls" there really are.

It is clear that even today it is necessary to take a decisive step toward increasing the effectiveness of the utilization of computer equipment throughout the entire front of interaction of "computer industry--consumer."

it is difficult to hope for success of the program for computerizing the national economy until the economic interests of the computer industry and the computer consumers coincide in principle. Renting computers is only a first step along the path toward overcoming these contradictions.

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POSSIBLE DEVELOPMENT OF FISHING INDUSTRY SUGGESTED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 7, Jul 86 pp 51-68

[Article by V. N. Krasnokutskiy, candidate of economic sciences, deputy general director of the Kamchatrybprom Production Association (Petropavlovsk-Kamchatskiy: "The Fishing Industry: Problems and Strategy")]

[Text] One recalls a fragment from the story by E. Uspenskiy, "Three People From Prostokvashino" in which they are looking for sources to finance a cow. The hero of the work, Uncle Fedor, reasonably responds to one of the suggestions: "In order to sell something unnecessary it is first necessary to purchase this unnecessary thing...." One can see an analogue in the situation which now exists in the economy: in order to regulate something, it is first necessary to deregulate it.... The USSR fishing industry was not able to avoid the Prostokvashino problem. Because it is a part of the national economy and reflects both the overall achievements and the shortcomings in organization and management. Even though the uniqueness of the processes of catching and processing fish and products of the sea adds certain distinguishing features to production and, consequently, to its contradictions. It is impossible to understand these problems without knowing the history. After all, economics, in principle, is the same history of development, but in the statistics of economic indicators.

At the end of the 1950's the USSR Ministry of the Fish Industry sharply changed its strategy for the distribution of productive forces: the branch was directed toward the assimilation of the bioresources of the ocean. Fishing and processing fleets began to develop more intensively: in terms of quantity, sizes and other indicators. Thus during 1960-1983 the average capacity of a fishing ship increased 3.2-fold and a processing ship--1.8-fold. This could not but be reflected in a larger catch. During the first decade of the assimilation of the ocean (1960-1970) the catch of fish throughout the USSR Ministry of the Fish Industry doubled, and by 1983 it had increased almost three-fold.

The ocean strategy was manifested not only in the increased catch and the increased proportion of raw material, but also in other indicators. This pertains first and foremost to production capital and production capacities that are related to it. While the potential of the canning industry in the

USSR Ministry of the Fish Industry as a whole increased 3.5-fold from 1960 through 1983, the potential of the fleet increased 23.3-fold during this same period and its proportion increased from 7.7 to 51.0 percent. The daily freezing capacities of the coastal enterprises increased by 5.9 percent, and those of the fleet--10.6-fold. There was a corresponding change in the proportions of the production and economic indicators between the shore and the fleet. The center of gravity for production in the fish industry shifted to the ocean. This led to the appearance of the corresponding forms of organization of sea production.

Calculations show that when the fishing areas are more than 1,500 miles from the shore autonomous fishing with ships of the EMRT type becomes unprofitable. For this reason and also because of the development of specialized and cooperative forms of organization of sea fishing, there arose a need for the expedition form of industrial fishing. With this form the fishing ships carry out the fishing continuously throughout the trip and the fishing season, and specialized transportation ships, transshippers, provide for supply and transportation of the final product. This makes it possible to use industrial ships more effectively without diverting them to perform functions that are not properly theirs.

The large and costly fishing and processing fleet, grouped in industrial expeditions, has become one of the main features of the USSR fishing industry. Among its other peculiarities is the combination of Soviet fishing in the East and in the Pacific Ocean. While in 1960 the catch from the Soviet fleet in the Atlantic Ocean was twice as great as the catch in the Pacific Ocean, beginning in 1979 the latter began to take a confident lead. This is related primarily to changes in the international conditions for industrial fishing.¹ In 1977 the majority of coastal countries declared a 200-mile economic zone. The coastal shelves, which are the most productive waters of the Atlantic Ocean, thus came under the jurisdiction of foreign countries. The catch of the Soviet fleet in these waters decreased significantly while at the same time it increased in the 200-mile zone and in the internal bodies of water of the USSR and in the open part of the world ocean, that is, beyond the 200-mile zone of foreign countries. Thus while in 1975 the catch of fish in these zones amounted to 52.8 percent, in 1983 it was only 34.5 percent. The catch in our own fishing zone increased during this time from 29.9 to 36.0 percent, and in the open part of world ocean it more than doubled (from 5.8 to 12.1 percent).

The set of factors influencing the distribution of sea fishing also changed. The main organizational role and the distribution of the fleet in the Pacific Ocean shifted during the period from the middle of the 1960's to the middle of the 1970's from the technical factor to the natural factor, and from the middle of the 1970's on--to international conditions. The material and technical base for fishing today is less and less of an obstacle on the path to the utilization of the ocean's bioresources. As was correctly noted by Academician B. Ye. Bykhovskiy, the existing technical equipment makes it possible for us to remove "everything that exists" in a particular fishing region in a matter of hours.² Apparently in the future the strategy of fishing should be linked not to a quantitative increase in the fleet, but changes in the production and economic indicators of its operation--reducing

the cost of fishing ships, reducing expenditures on fishing, and further improving the technology for the utilization of biological raw material. It is known that "according to the most modest estimates, as a result of wastes during cleaning each year we lose no less than 20-25 million tons of fish and other water resources."³ The decade and a half that separates us from the time these observations were made is an extremely small amount of time for the technology of processing, and nothing essential has happened in the area, but the world catch has increased significantly during this time. Therefore today's losses when processing fish are almost the same as those mentioned.

The changes that have affected the USSR fishing industry were especially clearly and sharply reflected in the work of one of the largest associations in the Far Eastern region--Kamchatrybprom. Thus with a 4.5-fold increase in the value of the association's fixed production capital during 1966-1984, the fixed capital on the shore did not increase so rapidly--only 1.5-fold. Moreover, the fleet of Kamchatka is being augmented at more rapid rates than the fleet in the ministry and Dalryb as a whole. The proportion of fixed production capital of the Kamchatrybprom fleet in the overall value of fixed capital increased during this period from 63.4 to 92.0 percent, which is much higher than this indicator is for the USSR Ministry of the Fish Industry as a whole. In proportion to the fixed capital, the volume of production in the association is also being redistributed between the shore and the fleet. Thus in 1966 the fleet produced 40 percent of the commercial products, and today--almost 70 percent. During these years the fleet increased the volume of production of commercial products almost 8-fold, while on the shore it increased 2-fold and the fleet increased the production of canned goods 66-fold while on the fleet it increased 3-fold.

Progressive changes have affected many production and economic indicators of the association. Thus the volume of production (for commercial output in monetary terms) increased almost 5-fold. Profit, the summary indicator of financial activity, increased 36-fold while for the ministry as a whole it increased almost 6-fold. There was an essential increase in labor productivity, having reached the greatest among the associations of the USSR Ministry of the Fish Industry. But it should be noted that the growth rates of many of the physical indicators in the association were much worse than the value indicators. Thus the volume of extraction during this same period increased only 2.3-fold (the production of commercial output--4.7-fold), the overall balance of raw material received by the association for processing--1.9-fold, and the output of food products and physical indicators--63.1 percent. The question naturally arises: How could the increase in production be twice as great as the growth rates of physical indicators? Is this not a game of figures and price setting?

The wholesale prices changed twice: in 1975 they increased by an average of 4.5 percent, and in 1982, by 10.5 percent. If translated into commensurable prices the volume of production is still much greater than the increase in physical indicators: 3.7-fold as compared to 1.9-fold according to the balance of the raw material. It turns out that the influence of prices is not the main reason; it is something else. And primarily it is efficient utilization of raw material. The fact that in the association in less than 10 years the output of canned goods has increased 6-fold speaks for itself. Additionally,

while in 1980 only 64.5 percent of the catch went for products in the food industry, last year this proportion exceeded 88 percent. Today 99 out of every 100 tons of wastes from cleaning fish are put to use. The output of mintay and cod caviar alone has increased 4-fold since the beginning of the 11th Five-Year Plan. As a result of efficient utilization of raw material, the yield of commercial products from 1 ton of raw material has increased by 20.6 percent (as compared to 1966--2.4-fold). This was obviously the decisive factor. A certain shortage of fish raw material made it necessary to take a thrifty attitude toward bioresources. The idea about the inexhaustibility of the ocean and rivers was replaced by an understanding of the limited nature of these resources and a recognition of the need to save every kilogram of fish that is caught and to transform it into a final product.

Thus during the past 25 years the structure of the branch and its material and technical base have been determined completely by the development of ocean fishing. At one time this course justified itself. But this led to a situation where the fishing and processing fleet increased at immeasurably more rapid rates than did the coastal fish processing enterprises and the coastal infrastructure which was called upon to provide for the basic production: ship repair, port facilities, and transportation. Capital investments in the fish industry amounted to about 20 billion rubles during the past 20 years. Two-thirds of this amount went to the fleet, which exceeded capital expenditures on fishing port and ship repair and fish processing enterprises taken together 6-fold. The fishing ports and ship repair enterprises were treated worse: the rates of increase in capital investments in them were one-half the amount invested in the fleet. "The absolute leaning in the direction of active ocean fishing inevitably led not only to disproportionately weak development of fishing operations but even to a deterioration of the shore base of the branch and coastal fishing."⁴ "Because of the weakness of the coastal material and technical base, Far Eastern fishermen today can no longer handle the large schools of Pacific Ocean salmon that approach the shore."⁵ This is perhaps the main negative result of ocean globalism for Kamchatka. One cannot but agree with the author that the time has come to restore that with which the Far Eastern fishing industry began--fishing villages and fishing combines; it is necessary to create a powerful coastal fishing and processing base in order that the fishing not include only "selective" (expedition, mass) objects and regions of fishing, but all possible ones and those that are recommended.

Research (see the work of Moiseyev, G. A. and Shuntov, V. P.) shows that if the industrial loads on all facilities are increased to the optimal, this will make it possible not only to assimilate many kinds of fishing and nonfishing objects and to increase the catch of fish within our economic zone, but it will also be possible to make the bioproductivity of the zone more stable. For these purposes it is necessary to depart from the customary expedition forms of fishing and activate coastal fishing with processing of the catch on shore. But the restoration of the coastline should apparently take place in a new mode of technical development. The current manual labor everywhere under the difficult climatic and social conditions do not attract and cannot draw in specialists in spite of any material incentives. With the existing shortage of labor resources one cannot count on an influx of them and it is necessary to count on only the ones who are already there. It is possible to do the work

with existing forces only if there is mechanization and automation of labor-intensive processes.

The peculiarities of catching and processing salmon, the main product of the coastal enterprises of Kamchatka are such that, while comprising 7.0 percent of the association's overall balance of raw material, it comprises 23.25 percent of the output of commercial products and 40-45 percent of the profit. The salmon migration is brief, the fishing season lasts only 2-3 weeks. Any time missed during this period leads to great losses. One "good" storm during the salmon run, putting the trap nets out of order, can reduce the entire expected effect to nothing. This is why it is necessary to catch all the salmon intended for production in the shortest possible periods of time. Therefore for purposes of insurance, but mainly because of the shortage of receiving capacities, additional floating capacities are installed along the coast: oceanic fishing trawlers, industrial refrigeration ships, and floating bases. The economic losses involved in this increase in receiving capacities are great: the ships are taken away from their fishing regions well ahead of time, and far from all of them are in the immediate vicinity. They are reequipped, prepared for salmon, and then, after 2-3 weeks, they return to their previous places.

The salmon cover all these losses, but in essence during this period the fleet is performing the tasks of the shore by flanking the fishing regions. And this is unnatural: the fleet should do its job and the shore should do its job. The ocean fleet should travel the seas and oceans and the coastal enterprises should handle all of the salmon, and not only the salmon but also those small concentrations of coastal objects for which it would be expedient to organize expedition fishing. But today this is only a desire for the future. It would be possible to make it a reality only on the basis of radical technical reequipment of the coastline. It should be equipped with modern dock lines, the processes of fishing and processing should be mechanized, and hydraulic structures should be constructed which would reliably protect these objects from unstable hydrological and meteorological conditions.

Under the 11th Five-Year Plan certain measures were taken to reinforce the coastal base. At the majority of fisheries worn-out and obsolete refrigeration equipment was replaced with new fast-freezing equipment. Five new imported 500-ton refrigerators were put into operation, and in 1985 17 more refrigerators arrived with an overall capacity of 14,500 tons. But the port points along the coastline still do not have docklines, they are poorly equipped with lifting and transportation mechanisms, and those that exist have been in operation for dozens of years already. But the main thing is that the enterprises along the coast still depend completely on the caprices of the Okhotsk and Bering seas.

The fishing industry is participating directly in the implementation of the Food Program, and since November 1985 the Ministry of the Fish Industry has been included in the USSR state agro-industrial complex. Four-fifths of the products of the Kamchatrybprom Association are consumer goods. The main task of all units of the fishing system is considered to be maximum satisfaction of the needs of the population for fish products: the output of products in the

greatest quantities, the necessary assortment, and the highest quality, and their delivery to the consumer in the shortest possible periods of time.

But a strange metamorphosis has taken place. Some time a quarter of a century ago ship repair enterprises, the transportation fleet and the fishing ports were included in enterprises for catching and processing fish. Everything was plain and clear, and they all had a single goal which covered everything: to catch, process and ship to the consumer prepared fish products. With time, along with development growth and specialization, these productions "broke off" and started an independent life, forgetting about their initial task and purpose. And in some inexplicable way what are essentially auxiliary productions began to dictate the conditions to the main production: We will ship this and this we will not; We will repair this, but this is disadvantageous for us.... And the enterprises that catch and process fish turned into beggars and guilty parties.

The shortage of tonnage for shipping the prepared fish products is the most crucial problem in the Far Eastern fishing region. Shipping is provided mainly by Vostokrybholodflot, a specialized transportation enterprise. What today are the interrelations between the manufacturer and the shipper regarding the final goal of the fishing industry? Vostokrybholodflot must pay 1 ruble for every ton of products that is not shipped. But the supplier has to pay 5-8 percent of the value of the products that have not been delivered plus 20 percent of the cost for delivering products of a lower quality. And if the products have not been shipped promptly, it is almost impossible to avoid having their quality deteriorate. Thus the fines for the manufacturer per 1 ton, for example, of lightly salted salmon is 1,453 rubles. Even for the least expensive fish, frozen mintay, it will be necessary to pay 90 rubles per tons, and the manufacturer is completely at the mercy of the shipper, who only has to pay 1 ruble. Is this fair?

In recent years there has been a tendency toward increasing costs of repair work for ship owners and increasing time periods for repairing ships. The existing practice for evaluating the activity of ship repair enterprises does not encourage a reduction in production costs or a reduction of the time periods for ship repair work but, rather, on the contrary: today's system encourages an increase in expenditures, and frequently the plan is fulfilled as a result of costly equipment. Ship repair workers avoid capital repair of mechanisms and strive to replace them with new ones since their cost is included in the volume of work that is performed. When they have their own tugs and floating docks they try to lease them to outside organizations--the more floating equipment that is leased, the higher the cost of repair of the ship and the more easily the plan is fulfilled. And one finds real paradoxes: in practice the repaired ships stand idle at ship repair enterprises waiting for the following month, since the plan for the current month for commercial output has been fulfilled.

Transportation offices, shipyards and fishing ports, having grown to incredible sizes, apparently cannot fit into their former trousers--production enterprises for catching and processing fish: there exists an optimal amount of controllability. Though even this assertion is not unquestionable, the experience of the Murmanskaya Sudoverf Production Association under the

Sevryba VRPO jurisdiction refutes this conviction. One thing cannot be doubted --all links in the chain of the fishing industry and their tasks should be subordinate to one final goal of the fishing industry--all-around satisfaction of the needs of the people for fish products. This is not yet the case.

The lack of balance of the capacities of the manufacturers of the products, the transportation fleet and the fishing ports as well as the lack of coordination of the indicators of their labor and the measure of their responsibility lead to an increase in fish products that are not shipped from the enterprises, and on Kamchatka this "increase" has become more active. Thus while in 1970 the canned goods remaining on ship at the end of the year in the USSR Ministry of the Fish Industry amounted to 6.5 percent of the annual volume of output, in Kamchatrybprom it was 13.9 percent; in 1983 for the ministry--9.6 percent, and for Kamchatrybprom--22.3 percent. Almost one-fourth of the products produced remained in the warehouses. In 1984 enterprises and ships of the association dispatched 31,000 tons of products that had been in storage one-third longer than the permissible time periods, or 7 percent of the food products produced during the year, and 16 million conventional cans of preserves or 15 percent of the amount produced. A consequence of the delay in shipping fish products is the fact that its quality is lower than in the USSR Ministry of the Fish Industry as a whole and it is practically not improving. Under the 11th Five-Year Plan the idle time of the fleet while waiting to ship fish products from only one of the three bases of the association amounted to 2,012 ship hours, which in monetary terms (in output of commercial products) is equal to 91.6 million rubles or 50 percent of the base's annual plan.

A fairly significant factor that reduces the effectiveness of production is arrears in the development of a social sphere. And although the wages, one of the social indicators, increase annually in Kamchatka at more rapid rates than in the branch as a whole, it is also important to provide for housing, kindergartens, schools, and cultural institutions. With respect to these indicators Kamchatka Oblast is one of the last of the 86 oblasts of the Russian Federation. If one takes into account that the average age of a Kamchatka resident is 27.5 years, the need to develop the social infrastructure becomes even more obvious. But so far there is increased labor turnover here and, consequently, a constant influx of unskilled, poorly experienced workers. In 1984 24 percent of all the workers were released from enterprises of Kamchatrybprom. The majority gave as the reason for their leaving the lack of provision of housing and kindergartens.

But there are essential unsolved problems in wages as well. The main one is the payment for the labor of managers of enterprises of the fishing industry and the administrative staff.

A fishery on the coast of Kamchatka is the only industrial enterprise of the village. The fishery's subsidiary farm provides the entire village with groceries; the plant's port point receives and processes cargo for all enterprises; the plant boilers heat the plant and its workers, and also the

schools, hospitals, kindergartens and residents not directly employed by the plant. With a staff of plant workers of 300-400, it actually supports a village of 3,000-4,000 people.

Self-sacrificing people who love their native home work on the sandy shores washed by the waves. As for material remuneration for the extra long working days, this is the way it looks. The salary of a manager of a fish industry enterprises of Group VI is 135 rubles, and in the first, the highest group-- 215 rubles. The wages of the other workers of the plant administration are distributed proportionately. At the same time, the salary of a manager of, for example, an agricultural enterprise of Group VI is 240 rubles (that is, higher than for Group I of managers of the fish industry), and the agricultural manager of Group I receives 345 rubles. Wages for managers of enterprises of the Kamchatkef Association are significantly higher. It turns out that the leading branch of Kamchatka has the least well-paid managers. The work at enterprises of the fishing industry is hardly easier than it is in other branches. The conditions for life and daily activities are no better either. And the natural question arises: why are there such great differences in wages? Has the time not come to reduce this difference somehow? The more so since now when we have become official partners in the USSR Gosagroprom. Apparently one should also take into account the circumstance that some sources of increased earnings in the form of current bonuses are practically not offered to enterprises of Kamchatrybprom. A large number of indicators for bonuses and basic and additional conditions nullify the entire system of incentives: fisheries and fish canneries along the coast of Kamchatka have received their quarterly bonus on an average of once during the past 3 years. Half of the enterprises (incidentally, the staff of the association as well) have not received any bonuses under the current bonus plan at all.

The documents of the 27th CPSU Congress made the fishing industry responsible for large tasks for producing food fish products and canned goods. What are the ways of carrying them out?

There is hardly any justification for counting on an essential increase in the oceanic bioresources. The dynamics of the world catch as a whole and for individual fishing regions in particular shows that we are gradually approaching a certain limit in the catch which is conditioned by the state of the biological supplies and the technical level of the means of fishing. Thus during the first postwar decade (1950-1960) the world catch almost doubled (a 1.9-fold increase) and during the next decade (the peak of ocean fishing) it increased 1.7-fold, but during the decade of 1970-1980 it increased only by 7.7 percent, and these rates of increase are continuing into the current decade.

The USSR's proportion of the world catch has stabilized during past years at the level of 12.4 percent. International conditions for industrial fishing do not make it possible to count on the idea that the limitations on expedition fishing will decrease and our share in the overall catch will increase. Nor is there any reason to assume that the assortment taken from the ocean raw material will improve with respect to its qualitative characteristics. Thus in 1960 herring, perch, cod, and plaice comprised half of the catch in the USSR Ministry of the Fish Industry; in 1983 they comprised 6.5 percent, and

50.5 percent was sprats, mintay and trachurus. In the raw material balance of the Kamchatrybprom Association in 1966 perch, herring, and plaice comprised 58.4 percent of the volume, and in 1983—only 6.7 percent, while Mintay, small herring and trachurus comprise 62.7 percent. Nonetheless, with the existing quantity and assortment of bioresources it is necessary to produce more products and with consumer qualities that equal and perhaps even surpass those of the previous assortment. The task cannot be carried out with the present-day technology for processing fish and sea products. But if the technology does not correspond to the composition of the bioresources, it must be changed! We need new areas for the utilization of the ocean's resources which are capable of "enriching" existing raw material and giving it properties which will satisfy the consumer and at the same time extract the most possible food content from it.

The next task to be set for us by the documents of the 27th Party Congress is to raise the technical level of the means of production.

More than 9,000 units of new technological and energy equipment worth 34 million rubles, including 556 units of imported equipment, were introduced in the Kamchatrybprom Association at enterprises and in the fleet during the years of the 11th Five-Year Plan. They introduced 63 comprehensively mechanized and semi-automated lines, machines for sorting small fish and cleaning salmon heads, and comprehensive lines for processing salmon caviar. Technological lines were installed on the ships for producing cooked and frozen crab. Preserving lines were reconstructed on the floating bases and their capacities were increased to 300 tubs per day; lines were created for producing Kalmar-Naturalnyy canned goods. All the floating bases were equipped with universal sections for producing cleaned mintay, mintay fish sticks, and cleaned herring and salmon. At practically all of the floating bases the manual wrapping machines were replaced by semiautomatic ones. Modernized equipment for producing fish oil was also installed on ships of the fleet. During the years of the 11th Five-Year Plan 12 million rubles were invested in modernizing the fleet.

Underwater equipment is used on fishing ships. This has increased the effectiveness of trawling and increased the capacity of the trawlers 1.6-fold. Fishermen of the association have successfully mastered the use of crab traps. A large amount of work is being done on ships of the fleet for modernization and replacement of obsolete fish prospecting, radio navigation and hydro-acoustic equipment, and instruments for satellite navigation, which saves a considerable amount of time when ships are being moved to fishing regions, and increases the safety of travel on the sea.

Work for technical reequipment and modernization of production capacities is also being done at coastal enterprises. All this has enabled the association during 4 years of the 11th Five-Year Plan to increase the output of fish commodities by 39 percent and the output of canned goods by 28 percent; and it has also managed to introduce 49 new kinds of products into production. It is important that at the same time labor productivity increased by 39 percent and is ahead of the 4-year planned assignment by 15.4 percent. The coastal fishing enterprises have increased the output of commercial products by 74.3 percent and the output of canned goods by 45 percent, while the number of

Industrial production personnel has increased by only 239 or by 4 percent, that is, practically all of the increase in output has been accomplished as a result of increasing labor productivity.

But when summing up these optimistic figures we are still well aware and understand that the salting and cleaning of salmon and herring on Kamchatka, the main production processes at coastal enterprises, are done by hand. This is probably what Corresponding Member of the USSR Academy of Sciences P. G. Bunich had in mind when he wrote that "essentially, the processing of fish is done by methods that were applied even before World War II while the nature of fishing and the composition of the catches have undergone significant changes."⁷ Only 8 percent of the workers employed in producing salted fish products use mechanisms in their work. But on the scale of the association 10,000 of the 17,000 workers perform manual operations. Immense social and economic reserves lie in the elimination of this anachronism.

One of the main indicators of scientific and technical progress is the updating of the active part of fixed capital. The 27th Party Congress gave a clear instruction regarding this: to accelerate the updating of the fishing fleet." The association has a large number of ships, machines and equipment that has been in operation for dozens of years, is worn out and is obsolete. In the fleet alone there are 37 ships that should be written off.

At enterprises of the association the percentage of updating of fixed capital is extremely small, especially with respect to working machines and equipment. During 4 years of the 11th Five-Year Plan only 3.7 percent of the active part of worn-out capital was eliminated, while the increase amounted to 31 percent, that is, there was practically no updating. Today there are more than 1,200 units of motor vehicles, construction equipment and other equipment, most of which has been in operation for 15-20 years. Because of the technical condition the coefficient of their utilization does not exceed 30-35 percent, and, after all, there is a worker working at each mechanism.

Another problem which requires a principally new solution is mechanization and automation of the output of products on ships of the fleet and their delivery to the consumer.

Today fish products from the ship (frozen, salted, canned and so forth) go along the route "manufacturer-consumer" with the following manual stages: packaging, placing in the hold of the manufacturing ship, transfer to the transportation ship out in the open sea, unloading from the transportation ship to the warehouse, loading from the warehouse to the railroad cars, from the railroad cars to the holds of river ships, unloading onto the river dock, delivery to the trade base and, finally, the final stage--delivery to the store.

It would be possible to eliminate at least two of these transfers (if, for example, the products were loaded from the transportation ship immediately onto the railroad cars, bypassing the river transportation). But there still remain seven. What kind of packaging can withstand this? Neither barrels nor corrugated metal containers, of course. And therefore thousands of complaints come from the places of consumption: the containers are dirty, rusty; the

salted fish is of poor quality.... Apparently the only kind of cargo which can withstand the voyage of thousands of miles and many stages and still be returned are regular ship containers. But why not charge over to them?

There is already a prehistory of the mechanization of the shipping of fish products: packaging of consolidated loads, packet slings, and other attempts to solve the problem. The logical culmination should obviously also be containerization of cargo transfers and, consequently, also means of transportation. The advantages of container shipments are obvious: rental labor is reduced in all stages, the amount of time required to deliver the products to the consumer decreases, quality improves, and material expenditures decrease because containers for one-time use are eliminated.

The course toward the assimilation of the bioresources of the oceans is necessary and inevitable. But it must be embodied with minimum expenditures, and this means accelerated elimination of all bottlenecks. The development of the coastline should proceed in parallel to this course.

We have refrained from producing large freezing trawlers which up to this point have been profitable in spite of the fact that they are 20 years old. We have changed over to "super trawlers" which began to be used at a loss immediately after they were originated. This is because the "super price" of the new trawlers is much greater than their production capabilities or the increase in labor productivity. It is also because there is no significant area for their operation. Perhaps the time has come to revise our position and go back to the simple RKT's and RIM's without adding the "super". They have already cost us enough.

Practically the entire period of the development of Far Eastern ocean fishing is accompanied by large amounts of idle time of fishing and production ships because of the shortage of means of transportation and the poor handling capacities of the fishing ports. By eliminating these losses alone we would increase the effectiveness of the fleet's work by 20-30 percent. Perhaps this argument should also be the main one when determining the paths of development of the fishing industry for the 12th Five-Year Plan. The development of stock lines, roads and hydrotechnical installations in the future will be inevitable. But this problem, because of its immensity and the many millions of rubles' worth of capital investments, is a task for more than one five-year plan. But shipping the final products from the warehouses of the coastal enterprises is a concern of the present day.

In 1985 the association in conjunction with the steamship line conducted an experiment on the utilization of lighter shipments to supply coastal enterprises and ship canned goods. We shipped 27,500 tons of cargo according to this plan. The economic advantage was obvious. Perhaps we should change over from an experiment to practice and turn over the lighter Aleksey Kosygin for the fish industry of the Far East to rent for the summer period?

There were a dozen and a half comprehensive target programs (KTSP) in effect in the fishing industry in effect in the fishing industry under the 11th Five-Year Plan. There were probably justifications for introducing them and precisely this number. And, probably, there is some effect from this.

application. But judging from the KTSP Losov, the effect turned out to be much less than was expected. Perhaps the time has come to revise them and reduce them somewhat so that more attention will be devoted to the remaining KTSP's and they will actually become the main unit in the development of the fishing industry.

Since January 1986 the fishing industry has been operating under new management conditions. A great deal is expected from this important step. And the main thing the managers of fish industry enterprises are counting on is the creation of conditions for high-quality, highly productive labor, initiative, enterprisingness and acceleration of scientific and technical progress. Then the aforementioned contradictions will be eliminated and the fish industry will proceed confidently along the path of intensification.

FOOTNOTES

1. Evaluating the situation objectively we note that the tendency for Soviet fishing to shift to the Pacific Ocean was observed even before the introduction of the international conditions, but it was also accompanied by an increase in the proportion of the catch in the Atlantic Ocean. Thus from 1960 through 1976 the average annual increase in the proportion of Soviet fishing in the Pacific Ocean amounted to 1.9 percent, and in the Atlantic Ocean--0.4 percent, which should be regarded as a kind of planned equalization of the loads over various fishing regions. But during the past 7 years (1977-1983) the catch in the Atlantic Ocean began to decrease sharply, by an average of 2.3 percent per year, and in the Pacific Ocean it continued to grow, with average annual rates of 1.2 percent.

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4. Shuntov, V. P., "Biological Resources of the Okhotsk and Their Utilization," RYBNOYE KHOZYAYSTVO, No 12, 1984.

5. Shuntov, V. P., "On Our Own Shores," PRAVDA, 26 December 1984.

6. "Activating the Human Factor" (from the 6th General Fleet Party Conference of the Rybkholodflot Base), KAMCHATSKAYA PRAVDA, 10 November 1985.

7. "Okean. Ekonomicheskiy problemy osvoyeniya" [The Ocean. Economic Problems of Assimilation], ed. by P. G. Bunich, Moscow, "Ekonomika", 1975, p 106.

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PRODUCT QUALITY CONTROL SYSTEM DESCRIBED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 7, Jul 86 pp 69-83

[Article by Yu. D. Popov, engineer (Perm): "The Quality of the System of Quality"]

[Text] In terms of the level of their quality items with the Soviet trademark should be on a par with world achievements, as was emphasized in the Basic Directions for the Economic and Social Development of the USSR During 1986-1990 and the Period Up the Year 2000. But so far we cannot say that our product quality satisfies us. In this connection a great deal of interest is evoked by the system of product quality control (KS UKP). At one time many hopes were placed in this system. It was discussed extensively in the press, including in EKO. But time has passed and many hopes have continued to be only hopes. The system has not made any radical improvements in product quality, which we still need. This is discussed in an article published on the pages of the magazine. Possibly certain of the authors' assertions will seem questionable to you. We will be glad to offer space in the magazine for opponents.

The Quality of Work or the Quality of Products?

A comprehensive system of control of quality of work (KSUKR), which was developed at enterprises in the country in 1974-1980, has entered the period of operation. Reports on its introduction and successful operation have been submitted by the majority of large production associations. Enterprises are reporting significant sums of economic effectiveness from measures introduced within the framework of the KSUKR and are certifying products for the State Emblem of Quality.

The origination of the KSUKP in our industry was conditioned primarily by the insistent need for a large quantity of powerful and precise mechanisms that would operate reliably under the most extreme conditions, in various environments and with maximum speeds. The task that was set could be carried

out only with the most modern technological processes, high quality of mechanical processing, and the application of new materials, original designs and ergonomic solutions. Comprehensive control and regulation of all of these factors were also to be provided with the help of systems for controlling product quality.

It was also presupposed that for all of the items produced, for all of the components of which they consist, and also individual important parts comparative quality indicators would be developed which could characterize the distinguishing features of the purpose of the item, the technological level of its manufacture, the reliability and durability, the ergonomic peculiarities, the possibilities of obtaining patents and competing successfully, and a number of other parameters. The overall number of indicators was 8-11. It was intended to establish a given level of quality of a particular item (either with respect to an analogue or with respect to the convention base item) and then regulate it in all stages of production. The evaluation of the quality of labor, the insurance of the technical level of production, the training of personnel, the social development of the collective and other factors would be taken into account as indirect constituents which influence the quality of the products that are produced and were to be singled out into auxiliary subsystems that form the regulating complex.

The methods for introducing the system which were applied at enterprises during 1976-1979 led to a situation in which this program remained unfulfilled. The main ones who were "not up to it" were the USSR State Committee for Standards and a member of head institutes which were not able to take charge of the development of the system, by promptly providing certain guidelines and fundamental documents for this.

An indirect mention of the system appeared in GOST V2.57.101-76, "Comprehensive System for Quality Control (KSUK). General Provisions" at the end of 1977. The subject matter that was developed suggested that the base enterprises began to produce OST's for technical control of items, taking into account the "specific features of production," that is, for parts for the automobile--one OST, for a bicycle--another, and so forth. Many OST's were produced and approved, and the lack of substantiation for the basic idea of the KSUK was immediately discovered. Thus in shops that bore pipes there were three OST's in effect at the same time for various equipment. Naturally, they were distinguished by various requirements on the equipment, location and technological process, and sometimes they were incompatible. This system which could not exist either in theory or practice, according to the assertion of the GOST, was to be included in some KSUKP (?) and was a subsystem of it. The developers obviously understood the weakness of the position that had been taken and this project was halted. But the unnecessary, but already published GOST's have not yet been abolished. The plant developers knew what the KSUKP only from scientific literature and from papers at the corresponding seminars since many enterprises had already begun to introduce a system based on the general principles of management. Not until 1981 did GOST 24.525.2-80 "KSUKP. General Provisions" come out. But the most paradoxical thing is that it did not extend to all kinds of products. One cannot reproach the State Committee for failing to understand the prompt publication of these documents. As early as 1975 20 standard plans for plant standard productions (STP's) were

published for the corresponding number of tasks included in the overall range of problems that were to be resolved by the system.

The selection of these tasks was somewhat arbitrary, but at that time nobody was bothered since it was intended to publish the entire volume of tasks carried out through the KSUKP. Nonetheless, because of the lack of GOST's, the selection left its imprint both on the intraplant developments and on the designs of systems created by branch institutes. They accidentally or intentionally had mainly to do with questions of quality of labor and, in spite of the lack of legislative force, gave the developments the corresponding direction. Thus the Lvov, Minsk and Riga systems, which lay at the basis of modern developments, proceeded along the line of encouraging improvement of the quality of labor (work) and not control (regulation) of the given level of product quality.

The KSUKP was introduced into the KSUKR as a subsystem in the majority of departmental plans, but there was no hint of any establishment of a given level of quality in specially developed indicators for controlling product quality. Here it is appropriate to recall that the given level of product quality is a concept that actually exists and is regulated by the "card for technical level of quality" which is filled out when submitting technical documentation for conferring the State Emblem of Quality. The fact that the card does not envision the existence of all 8-11 indicators is its essential shortcoming. These concepts also figure in the aforementioned GOST 24.525.2-80 where it says directly that control over indicators of product quality should be provided in all stages of an item's development and production.

Thus a contradiction was created between the requirements of the theory, and also the GOST's, on the one hand, and the actually introduced plans for the comprehensive system, on the other. The situation was exacerbated also by the fact that the KSUKR's were developed by enterprises on the basis of the Saratov system of BIP (defect-free manufacture of products) and, naturally, retained as the main principle of the approach to quality control the release of the products with the first presentation (when grading the workers), which would have characterized the quality of the work of the workers. We are not setting as our goal to criticize the BIP. Yet it should be emphasized that the KSUKR, having expanded the range of effect of the old method but not having rejected regulation "of the given level of product quality" in terms of the aforementioned indicators, deprived itself of the possibility of efficiently controlling the quality of the item.

In and of itself regulation of a given level of product quality has meaning only with the most rapid possible reaction to the disagreements that arise. Then the system wards off either the appearance of mass defects or a sharp increase in production costs. But there is not a single paragraph of legislation that stipulates that the KSUKR must have efficient control. All the controlling decisions are made at so-called "Days of Quality." The time intervals between them range from a week to a quarter.

But of course the KSUKR could not do without quality indicators. Therefore a solution was found fairly simply--a group of indicators that characterize the quality of the manufacture of the item was arbitrarily called "indicators of

product quality" and introduced into the KSUKR. Sometimes the last word is omitted and we are dealing simply with "quality indicators." Sometimes the KSUKP subsystem openly controls indicators of the quality of work, as can be seen from the example of the engine construction plant imeni Ya. M. Sverdlov (Perm). For production and auxiliary shops, for example, these include the rhythm, level of technological discipline, and so forth.

There are only two direct quality indicators: the indicator of complaints of production and technological shortcomings and of design imperfections.

The main indicators of the work of the shops for control of product quality are considered by the UKP division to be: the number of cards for permission for deviations from technical documentation and the number of parts passed in deviation from the KTV; the number of intershop returns; and the proportion of parts and assemblies with the Emblem of Quality.

Yet in the KSUKR there is a special subsystem of defect-free labor (SBT) which includes control of the majority of the coefficients just listed. In many KSUKR's because of this there is also a list of functions of SBT for the subsystem UKP.

In our opinion, no small negative role was played by the generally accepted formulation of the concept quality which is current in our technical literature. For some reason quality has come to be called the "totality of certain indicators that determine the purpose of the item...." In this definition there are other additions which essentially clarify nothing. Thus quality is the totality of only those indicators which distinguish one item from another item in the same list, that is, a tractor from a tractor or a spade from a spade. And the indicators of quality lie not in the fact that the tractor pulls or the spade digs, but in the fact that one tractor has a greater engine life and the other has a shorter one, or the dirt sticks to one spade and to the other it does not. The generally accepted definition in no way limits the list of the "totality of indicators" thus not singling out decisive, specific indicators. Nor does it contain a comparative approach for determining quality.

How have these contradictions been reflected in the operation of the KSUKR?

First and foremost this has led to a refusal to introduce indicators of reliability and durability of items, technological level, continuity of design and degree of standardization, ergonomic qualities, the ability to obtain patents and compete, the ability to be repaired, operational profitability or the real level of allowable defects in individual components and the item as a whole. The term "degree of defects" is understood as correctable defects which are differentiated according to "causes" and are taking into account in terms of the degree of influence on the item's ability to operate when determining the quality of this part. This has deprived the KSUKR of the possibility of guaranteeing the required level of quality of the item and has led to the creation of specialized services for warranty supervision!

The application of indicators of the quality of labor both in terms of the purpose and along with indicators of product quality lead to a departure from

immediate control even in the event of such a deviation from technical documentation whereby a card permitting the deviation is filled out. There are cases in which the deviations are discovered after the final inspection and not during the course of the process of manufacture. Such an item cannot be refused to be put on the list for issuing a card permitting deviations from technical documentation. There is no longer any need to intervene during the course of the technological process, which in practice has been legitimized in all plans for KSUKR known to the author. The exception is flow line and mass production, where statistical control is used, when adjusting automated equipment or a book of remarks is used as at the Izhevsk Motor Vehicle Plant. The registration of this kind of deviations is done periodically and the management decision is made either by the PDKK or on the shop and plant Day of Quality, and in extreme cases by the administration, without any system at all. The time period for settling this is from 2 weeks to 3 months. Prevention of defective work is handled not by the KSUKP but, as was previously the case, by the technical control division.

A service for quality control, that is, the executive agency of the KSUKR, is missing at the majority of enterprises. The structure of the service has not been developed, and its ties, subordination, and sphere and mechanism of effect have not been stipulated either in the draft of the Lvov system or in the drafts of Minsk, Riga or Krasnodar. Today these services have been replaced everywhere by groups of three-four people created for developing the KSUKR. But since the stage of the creation of standards for the enterprise has been completed almost everywhere, these groups engage in adjusting the documentation that has been produced and prepare for the development of STP's of the second edition of the system, the so-called KSUKR-II. In places where they engage in the collection and processing of coefficients of quality of labor that come in from the shop authorities they sometimes are given the names of subdivisions for quality control, although they do not exercise control over actions. If these services actually do try to control quality, they encounter not only a lack of an object of regulation, that is, a "given level of quality," but also a lack of methods for gathering operational information, information software, an established policy for issuing control decisions, influence and feedback, that is, they simply do not know what they are doing.

The so-called coordination of the work of the KSUKR frequently amounts to issuing an order to write an STP, and then collecting signatures for its approval. The impossibility of arranging comprehensive control over the introduction of standards leads to a constant violation of them. This is revealed episodically, but frequently goes unpunished. The most typical violations of the STP at the enterprises are postponed control actions, violations of document circulation, exceeding authority, and failure to punish the people to blame for the fact that products are returned. In practice the activity of these enterprises has been reduced to duties similar to the functions of standardization divisions. The only difference is that some control the introduction of GOST's and others--STP's. In certain cases this procedure amounts simply to submitting information.

In the middle of the 1970's at certain machine building plants there was operational control at the level of product quality on intershop complaint

cards. As of today, as a result of adjusting the STP's in keeping with the plans for KSKR, this no longer exists and has been transformed into control of performance. Planning coefficients of the quality of labor is done by the method of "from the level achieved," since there can be no technically substantiated calculation of this with the exception of the degree of rhythmic work. As certain production associations the average planning coefficient of the release of products with the first presentation is 96 percent. The release according to the report is up to 99 percent. But this is with 300-400 complaints each quarter and small-series production!

The coefficient of the number of violations of technological disciplines is introduced quite arbitrarily. It is assumed that if one takes a certain percentage for inspection (25 percent of the technological operations from the overall number started up) then the percentage of violations will give a precise picture of the condition of technological discipline. But in this reality this percentage will depend on the level and quality of the inspections. Thus according to our statistics for many years, the percentage of violation of technological discipline registered according to the shop schedule ranges from 1 to 4 percent. According to the documents of spot checking it ranges from 5 to 12 percent. According to the documents of cross-checking and various commissions this figure reaches 20 percent and more. But these data, as a rule, are not taking into account when calculating the coefficients reported by the head technologist's service. The average percentage of violation of technological discipline for enterprises of Irm is in the range of 1.5-2.5. This is approximately one-half to one-third the actual amount discovered.

For the majority of the aforementioned constituent coefficients, at enterprises of the branch a comprehensive coefficient of labor quality is being established both for individual workers and for the collective. Wages are calculated from it. Here one also considers several principal uncoordinated factors. According to the policy for defect-free release of products with the first presentation, in order to encourage quality sorting of items by the worker, he does not have to pay the sum of expenditures for defects he discovers himself. At the same time, in the comprehensive coefficient of the quality of labor, at the majority of production associations, the fulfillment of the norm has been introduced as a constituent parameter or a mandatory condition for awarding bonuses. Thus, on the one hand, for defects revealed without the participation of the technical control division there would be no penalty but, on the other hand, in spite of high-quality products that are released, the coefficient of quality is low since the quantity has not been released! The bonus for quality is reduced correspondingly!

Let us take the opposite situation where the norm has been fulfilled but there are returns and therefore the coefficient of labor quality has been reduced. It is sufficient for the worker to obtain any elevating coefficient (for an efficiency proposal, for example) and the total coefficient of labor and performance (K_{ktj}) will make it possible to obtain earnings and a 100 percent bonus. As a results, in any case there is reason to try to cover up defective work.

The question of registering "returns" remains problematic. Even when the wages of the controller do not depend on the fulfillment of the plan by the shop (it depends completely on the fulfillment of the general plant plan) the second presentation is filled out, as a rule, only because of a final rejection. The so-called corrected defect is registered only rarely. Payment for high-quality labor of engineering and technical personnel is also insufficiently substantiated and far from always coordinated with the actual work in which the engineer is engaged. For example, a low coefficient of supply of equipment in the shop does not affect the K_{cti} of the technologist. As a result there have been cases in which shops where machine tools are readjusted five to six times a shift have not introduced the group method of processing parts! The design imperfections are not taken into account everywhere when calculating the K_{cti} for designers.

To this point there have been no additions to the instructions for the designs of KSUKR's which would establish their interrelations with the brigade form of labor organization. How will the work of the technical control division be arranged with the brigade contract? Individual enterprises are trying to introduce technical control of independent brigades by controllers. There are also other opinions--concerning the need to introduce their own controllers into the brigade or a controller who is assigned to the brigade. Not one of the known plans for KSUKR envisions this policy. Yet the application of the KSUKR with the brigade form of labor organization is of great interest. The brigade, being responsible for the final result, can easily independently regulate the given level of quality of the product it produces. And on the other hand there is no longer a need to control the quality of labor of an individual worker. In fact, what kind of second presentation can there be if the brigade has guaranteed the quality? And if defects are still discovered, these are defects of the entire brigade. As of today, attempts to reduce the capital K_{cti} of the brigade to the lowest K_{cti} of its member, as has been practiced in certain plants, makes no sense at all.

Because of a whole number of measures that encourage the quality of labor, the enterprises have not yet withdrawn the slogan that calls for improving the quality of the products that have been produced! It turns out that, on the one hand, we are establishing the optimally advantageous calculated level of quality within the framework of the KSUKR and at the same time we are asked to increase it to what is not optimal, that is, to violate it. Understandably, with the brigade method all these appeals will look like empty talk but it is time for "improvement of quality" to become the duty of the shop worker. Regarding this one repeatedly hears the question: "How is the worker to improve quality? Make the tolerances stricter or something?" It seems unrealistic to require that returns of poor-quality products from the consumers be eliminated. It is another matter to reduce the number of these.

All systems introduced in production associations envision application for computer software. Thus in keeping with one of the plans for KSUKR-1 the machine is given data for solving almost 100 individual problems, the majority of which have nothing directly to do with the quality of products that are produced, and the printouts are either a means of providing information for bookkeeping or, at best, they summarize the coefficient of the quality of labor, losses from defective work, and other economic indicators. In the task

of accounting for and analyzing defects they have not introduced such requisites as the number of the part or the number of the reason for the defect itself. In this form the printout is hardly suitable for bookkeeping. It is quite unsuitable for any kind of analysis whatsoever. Under these conditions the enterprises introduced only one-tenth of the entire list. But even in the tasks that were introduced, they did not manage to get rid of shortcomings since they did not envision operational quality control. They did not reliably accomplish the composition and sources of information, the systems for document turnover, or the technological systems for processing information. The situation described is already being repeated--the computers issue printouts periodically and promptly, but decisions are made from them after a time period of from 5 days to 3 months. (The day of quality for the plant director is once a quarter and it does not always have anything to do with questions of quality.) Since 1980 the documents from inspecting the functioning of the KSUKR and at enterprises of Perm have noted several cases where the printouts for the aforementioned problems were not used at all.

It seems that loading complicated and costly computer equipment with such tasks is unprofitable today. Even if one considers the current situation as a training process. The more so since the information that goes into the machine is not reliable. It is not an accident at all that the data from the printouts regarding quality are not used when calculating the effectiveness of the KSUKR (with the exception of the graphs of "losses from defects" and "fines").

Are Methodological Developments Improving?

The unsatisfactory work of the KSUKR, which is recognized in one way or another at the enterprises, causes them to continue to develop new plans and to improve the system. In 1982 in Perm a standard plan for the KSUKR-II was published. According to it certain enterprises conducted their own developments. Which of the advantages from the experience in working with the KSUKR-I were taken into account in the new plans? First and foremost, obviously, the range of the system did not seem broad enough. In spite of the introduction into it of individual subsystems of defect-free labor and the KSUKP, as was done everywhere, the plan initially envisioned the output of standards for 12 other subsystems. Each of them was to be represented by several standards that regulate the normal course of the activity of the subdivision, not at all from the standpoint of the SBT or the provision of the given level of labor quality, but from the standpoint of the ordinary working process. All these divisions regulated ordinary production processes. The subsystems SBT and KSUKP remained in the KSUKR-II without any serious changes as did also the entire policy for removal and inclusion.

The difference in the plans consists mainly in the quantity and names of the newly introduced subsystems. Thus one of the Frunze machine-building plants introduced 18 subsystems into the plan while one of the Tula machine-building plants reduced the number to nine, having combined several of them. These were control of scientific and technical progress; control of the production process; control of product quality (1); control of material resources; control of labor resources; control of technical and economic planning and financial resources; control of fixed capital and capital investment; control

of the social development of the collective (separately from technical progress and scientific organization of labor); and the system of defect-free labor.

The composition of each of the subsystems in the aforementioned plans make it possible to draw the conclusion that within the framework of KSUKR-II the enterprises can develop and introduce a system of production control. With this content of the plan it includes a position for describing the role of the quality control service. It is not known how it will appear in the new composition and what will be done in various stages (in the stage of development, for example). The mechanism for control of the new system and the structure of the control agencies are not clear either.

The shortcomings of the KSUKR, which are included during development and are manifested during operation of the system, were the reason for the skeptical attitude toward it on the part of the management of production associations. The majority of directors do not use the KSUKR as a lever for control and have preferred to entrust the control of this imperfect mechanism to their deputies. But there are other examples as well. At certain enterprises they have suggested effective solutions for completing the systems of quality control and are obtaining a real return from them.

The difficulties that were created during the operation of the KSUKR not only seriously discredited the system itself at its current level, but also created some kind of illusory atmosphere of self-deceit and complacency. They say the system of breaking in has come to an end and everything is in its place. This is a delusion. From the example of the system of defect-free manufacture of products it is clear that after 20 years of improvement we are still not efficiently controlling product quality. There can only be one way out of the existing situation--to recognize that the matter consists not in objective conditions, but in poor organizational development of directive technical documentation for the control system. Among the primary measures directed toward bringing the quality control system into working condition, one must extend the GOST 24.525.2-80 to the KSUKP's for all kinds of production.

The new tasks that ensue from the application of improved systems for controlling production and quality at enterprises and the introduction of the brigade contract will obviously also require a significant rearrangement of the structure of control of the enterprise and changes in communications, document circulation and the entire mechanism for management. All of this restructuring should be done on the basis of a unified GOST.

Regardless of whether or not methods for controlling product quality according to indicators are developed in the GOST, the enterprises must calculate the total coefficients for the establishment of the minimum permissible level of quality of the most important parts and components. They must develop a structure for the system of operational tracing of deviations from the level set using the help of these coefficients. The calculation of the degree of deviation from the given parameters should be done on an electronic computer with the corresponding programs, and the printouts should be produced only in the event of a negative discoordination. The control influences are submitted to the executive unit only at the corresponding level of management.

It is quite obvious that the bonus for "quality of products that are produced" should be paid only when these requirements are met. For failure to fulfill the norm it is quite sufficiently to reduce the payment of whatever bonus is provided for, and other penalties are not permissible since the worker himself has reported his own defects.

The quality control service should, in our opinion, be under the operational jurisdiction of the manager of the enterprise since as of today his deputies do not have the appropriate authority. The service's composition should depend on the selected method of checking on the level of quality and the system of information support (degree of their automation).

As a particular task which today determines the activity of subdivisions introducing the KSUKR it is necessary to put forth the coordination of work for correcting the standards of the enterprise that envision the introduction of a system of defect-free labor. This should include the development of an STP, "provisions concerning the service for control of quality of work"; the authority for the SBT; the calculation of the K_{kti} , and also the adjustment of bonus provisions. These subdivisions should be responsible for control and authors' supervision of the introduction of standards for the KSUKR and organize mandatory accounting for the system by the manager of the enterprise.

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INDUSTRIAL CERTIFICATION OF PRODUCTS DISCUSSED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 7, Jul 86 pp 84-89

[Article by V. R. Isakov, head designer of the Propellor Shaft Plant (Grodno): "New Policy--Old Results"]

[Text] On 1 July 1984 the country established a new policy for certification of industrial products. Instead of three quality categories, two were introduced. It was intended to recertify all products up until January 1986, and uncertified products were to be removed from production. The categorical point that says that uncertified products should be removed from production within a month contradicts the planned system of industrial production since all products produced by industrial enterprises are planned and coordinated with deliveries for sets or deliveries of spare parts. Consequently, removing any product from production without replacing them is generally unthinkable. This requirement in this case is not coordinated with the mandatory 100 percent deliveries, the fulfillment of the plan with respect to the products list and the volume, with the time for preparing for production of the new item, the provision of work and wages for the workers, and so forth. This pertains especially to narrowly specialized enterprises with series and mass production of products of a single type.

Moreover, and the magazine has already written about this, it is necessary to overcome a large number of obstacles in order to obtain evidence of certification of products in the highest or first-quality category that is registered in agencies of the USSR Gosstandart and signed.¹

And another thing. The many years of experience in direct participation in the preparation for and conducting of certification of industrial products shows that the planning system for distribution of equipment, materials and batching items sometimes nullifies the result of the efforts of the enterprise for introducing the achievements of technical progress into production and for raising the technical level of the items.

Let us take as an example the certification of universal shafts to be in the highest quality category. Before each certification the technical services of the shops develop measures which, as a rule, are directed toward providing for stable quality of the items, that is, obtaining parts that meet the

requirements of the working design documentation. These measures are taken towards the efforts of the services and productions of the plant. At the same time they develop and coordinate charts of the quality level, refine and verify the period of effect of technical specifications, fill out information cards, obtain responses concerning quality from the consumer (the automotive shafts), request candidacy in the State Certification Commission, and prepare an order concerning the creation of a state certification commission and other necessary materials. It automatically turns out that most of the attention in the process of preparing production for certification is directed toward preparing papers and not toward improving the production process or its final—the technological process.

Improvement of the technological process through the application of more progressive equipment and fittings as well as cutting and measurement instruments is being carried out constantly and is dictated to a greater degree by the requirements for increasing labor productivity, reducing production costs and providing for the geometric parameters of the item than it is by assignments for improving product quality. And it can be no other way. The plant is operating according to documentation of the head enterprise that holds the carbon copy and it is necessary first and foremost to produce products strictly in keeping with these carbons. In order to obtain the necessary information concerning the durability of the universal shafts the motor vehicle must be in operation from 2 to 5 years. And it turns out that this indicator characterizes the results of the production activity of the plant 2-5 years ago and not today. Thus the items are certified according to documents, but without the item itself.

This kind of certification cannot have an effect on improving the quality of the items themselves since there is no effective lever acting to change the design of the item. But even if there were one it would be difficult to operationally change the technological process for manufacturing the new item: this would require a considerable amount of material expenditures and time. The preparation of production is possible with developed and coordinated design documentation. Otherwise, regardless of the decision made by the State Certification Commission, the products needed for the national economy would not be produced.

Regardless of how many times we may recut one and the same design of a universal shaft for the highest quality category, this cannot affect its residual level until the design changes are made or technological measures are introduced which enable, for example, to increase its service life under the same operating conditions or reducing the mass or expenditure of material on its manufacture.

There are practically no economic incentives for producing high-quality products either. Our collective never receives incentive increments for producing universal shafts. This has been prevented by a mass of reservations in the normative documents. On the price list there is only one price for the item, regardless of its quality category.

Influence on the control over the observance of requirements for the quality of certified products on the part of the USSR Gosstandart and the ministry are

short-term and ineffective since they conduct inspections extremely rarely. Moreover the basic responsibility for their control lies with the technical control department (OTK) and the manufacturing worker directly. The OTC, being under the jurisdiction of the administration, does not always have the possibility of influencing the maintenance of the quality of each item at the level of the highest category. Thus on a general flow line with items that actually correspond to the highest quality category there sometimes appears an obviously defective product. All this lowers the Emblem of Quality and hardly contributes to technical progress at the enterprise. The situation was exacerbated when the volumes of items in the highest category began to be planned. The enterprise is constantly experiencing a not always justified pressure, the goal of which is to achieve an increase in their output. Such assignments are fulfilled by all means whether they are allocated or not. And as a result, the appearance of the Emblem of Quality on the item gives no guarantee that it was manufactured fully in keeping with the requirements of the technical documentation.

In order for the system for certification of industrial products to be truly a lever for scientific and technical progress, in our opinion, radical changes are needed.

First. The requirements for items in the highest quality category should differ sharply in their basic technical indicators and consumer quantities. If the enterprise is prepared to produce items of the highest quality category, it submits an announcement to the local agency of the Gosstandart for it to issue a certificate of the right to produce them. The Gosstandart agency either decides to refuse such a certificate or sends to the enterprise a permanent state commission to consider the application. The decision of the state commission is effective for 2-3 years. Gosstandart agencies can take away the right to produce items of the highest quality category in keeping with responses from consumers.

Items of the highest quality category are manufactured only with the agreement of the consumer, to whom they are delivered according to the agreement. If there are no consumers for the items in the highest quality category, the enterprise can produce these items with the agreement of the higher bodies, but at the price of the first category with an additional payment of 50 percent of the difference between the price of the highest and first categories into the enterprise's fund at the expense of the consumer organization. When there are consumers of the items of the highest quality category, the entire difference between the cost of the highest and first categories goes into the enterprise's fund for incentives for its workers and compensation for additional expenditures.

The need to produce items of the highest quality category should be explained by the consumer after a practical determination of the real superiority of the items of the highest category over those of the first category during operation. The assimilation should begin only with the items of the first category, and production should be progressed gradually for producing items of the highest quality category.

Second. A mandatory condition for providing for and guaranteeing the output of items of the highest quality category, in our opinion, should be their receipt by individuals not under the jurisdiction of the enterprise's administration. They should be representatives of the Gosstandart. To do this it will be necessary to transfer part of the OTK staff of the enterprises to the Gosstandart and its branches and laboratories. The Gosstandart should become an agency that supervises the fulfillment of requirements for quality in all stages and in all branches of public production. Subsequently control over the quality of products in the first category should be transferred to Gosstandart agencies. Thus the functions of the Gosstandart should extend to the development and publication of standard, guidelines and documents and control over the quality of technical documentation and items as well as the observance of the basic technological requirements in production and the determination of the quality of the prepared items.

In such a system the delivery of batching items of the highest quality category for items with the Emblem of Quality is taken for granted. This means that a universal shaft cannot be in the highest quality category if the bearings installed in it are in the first category. The same thing applies to a motor vehicle or any other item. An item that does not have the required quantity of batching items with the Emblem of Quality should not be marked as such. But even if it does have the necessary quantity of batching items of the highest quality category, the item should be inspected, tried out and tested in sufficient volumes so that the consumer will have no complaints about it during operation.

The proposed system will be able to work only if the consumer will pay the manufacturer for quality. And if poor quality products have been manufactured, the manufacturer will pay double fine, that is, double the difference between the prices of the highest and first categories, to the consumer and will eliminate the defect at his own expense. Only this way, by working for the consumer and not for production for the sake of fulfillment of the plan will it be possible in industry gradually to solve the problem of improving product quality and to make a significant contribution to accelerating scientific and technical progress in the national economy.

FOOTNOTE

1. Siteynbok, I. Ya., "How To Restrict the Undercover Indicator," EKO, No 7, 1984.

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FACTORS IN PRODUCT QUALITY INVESTIGATED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 7, Jul 86 pp 89-99

[Article by F. I. Palitsyn, candidate of technical sciences, A. F. Bedovyy, engineer-economist, and M. M. Pimonenko, candidate of physics and mathematical sciences (Leningrad): "Factors Influencing Product Quality"]

[Text] The Main Directions for the Economic and Social Development of the USSR During 1986-1990 and the Period Up the Year 2000 said that it is necessary to consider it a matter of primary importance to radically improve the quality of products and services that are rendered as a most important factor in the intensification of the economy and fuller satisfaction of the growing needs of the national economy and the population.

We are assuming that an analysis and elimination of the main factors that impede improvement of product quality should be conducted on the basis of a systematic comprehensive approach.

A situation has arisen in which it is disadvantageous for the manufacturing plants to assimilate and produce new, better-quality products. It has repeatedly been pointed out in the press that the assimilation of a new item requires a great deal of trouble and material and labor expenditures, but the plan is firm and uncompromising. Moreover, naturally, for many months the enterprise can be deprived of its customary bonus and other benefits and privileges. At the same time the price of the new item and the system of compensation for expenditures and losses do not provide any advantages for the enterprise that has taken on the work of assimilating new products. The system of planning plays no small role in the situation that has been created. Indicators of the quality of products that are produced, in particular, are severed from the quantitative indicators and are not accompanied by the corresponding responsibility.

On the other hand, the manufacturing plant is weakly linked to the consumer--it does not know whether its products have been sold, whether they are being stored in the warehouses or have been marked down and salvaged--and all this concerns the manufacturer very little. If no complaints come in it means that everything is all right.

In the literature they consider and suggest various variants of indicators of product quality which should be planned. These suggestions can be combined into several groups.

To establish for each item one most important indicator of quality and plan its quantitative value (for example, "Miles on Tires").

To plan a number of quality indicators that characterize each item;

To plan a number of generalized indicators of quality for a set of products of the same kind or of different kinds. For example, "proportion of items causing complaints among those delivered" or "proportion of products of the highest quality category in the volume of products certified," and so forth.

To plan the comprehensive qualitative-quantitative indicator (production of the quantity of items on the basis of the indicator of quality).

Each of these methods suffers from particular although not always obvious shortcomings.

If one proceeds from the idea that in our country there is a system of state certification of products, based on this it would be possible to suggest the following group of indicators for planning at industrial enterprises that take product quality into account in one way or another.

The volume of production of products in value terms and physical units (pieces, meters, tons and so forth) for each products list. Units of measurement should be those which are applied in the sphere of consumption of the product.

The entire volume of output of the product should be distributed over products of the highest quality category (VKK), the first quality category, those that do not meet modern requirements and those that are being modernized in order to bring them up to the highest (first) quality category as well as those that are obsolete and have been removed from production.

The normative for increasing the wage fund in this case should be differentiated according to a progressive scale depending on the growth of the volume of products in each of the aforementioned groups. The products should be planned and labor productivity evaluated according to these groups. But in order for the aforementioned indicators, which reflect product quality and certification based on it, to actually contribute to increasing the output of high-quality products, it is necessary to provide for objectivity and reliability of the certification itself.

Of a number of existing shortcomings that reduce the effectiveness of certification of products as a mechanism directed toward improving quality and updating the assortment, let us consider only two:

the lack of strict, well-formulated and easily controlled criteria for including certified items in quality categories and a clear-cut system of evaluating the level of their quality;

the lack of strictly regulated responsibility of members of the certification commissions for the results of their certification.

Because of these and other shortcomings a considerable proportion of the products which have been awarded the state Emblem of Quality actually do not meet the requirements placed on products of the highest quality category. Let us recall three basic requirements:

surpassing or corresponding to the best domestic and foreign achievements in terms of the indicators of technical level and quality;

providing for a significant increase in labor productivity;

being able to compete on the foreign market.

These shortcomings lead not only to an unjustified increase in the rating (conferring of the Emblem of Quality), but also simply to curious cases. Thus, for example, residents and guests of Leningrad, Moscow and other cities are surprised to see on the streets manhole covers on which are cast the number of the technical specifications and a depiction of the state Emblem of Quality (unfortunately, the quality of the castings do not make it possible to read the number of the technical specifications). The ballpoint pen produced by the Soyuz PO (costing 35-40 kopecks) also has the state Emblem of Quality, but it is difficult to see the depiction of it with the naked eye. If one adds that these pens frequently do not work or the ink comes up only with certain efforts, one cannot understand what the state Emblem of Quality has to do with this item--it hardly corresponds to the best world achievements in this area. The list of items like these could be extremely long.

The drive for increasing the number of items with the Emblem of Quality and the lack of effective conditions for not allowing the state Emblem of Quality to be conferred on items that do not meet the requirements of the highest quality category also lead to the situation.

The state normative documents developed by the Gosstandart for organizing the work in the area of certifying products in various quality categories do not regulate the responsibility of the state certification commissions. When any product is deprived of the Emblem of Quality because it does not deserve it, no one can remember who has awarded this item the Emblem of Quality without any justification. On the other hand, the organization of the work of the commissions at the manufacturing enterprise and the preliminary evaluation of the level of quality of the products certified by the organizations of the manufacturing branch as well as the inadequate competence of members of the commissions do not create conditions for guaranteed realization of the high requirements of the system of product certification.

A number of provisions of the system for state certification of product quality must be revised, providing not only for maximally objective evaluation of products, but also for the corresponding legal and material responsibility of the certification commissions. It is necessary to extend certification to all industrial products and not reduce the range of them from year to year.

It would be expedient to revise the content of work included in the plans of branches for the creation and introduction of new technical equipment, envisioning including in them only work that culminates with:

new theoretical provisions with recommendations for their practical utilization in applied scientific research or experimental design work;

the creation of principally new technical equipment or technology for which it is suggested that patents or author's certificates be acquired;

the creation of new technical equipment which will provide for a reduction or elimination of imports;

the creation of new, highly effective methods of solving problems of product quality control.

The next essential factor influencing the quality of products that are produced is price setting. I should like to note first and foremost the small degree of effectiveness of increments that are introduced to wholesale prices for items that have received the state Emblem of Quality. A large part of the items with the Emblem of Quality do not have these increments and for those that have received them the increment is quite insignificant and does little to motivate the enterprises to produce items of the highest quality category. There are a whole number of obstacles on the path to effective application of these increments. The procedure for formulating the increments is lengthy, complicated and separated in time from the moment of certification. If the profitability of the items is higher than the normatives, the increment is not established at all. A mandatory condition for establishing increments is the consumer's agreement, and this is not always advantageous to him, and so forth.

Any item that is certified for the highest quality category absolutely must have an increment to the wholesale price. Moreover, in our opinion, the increment should be established simultaneously with the awarding of the Emblem of Quality to the item, and in considerably large amounts than now.

Additionally, it should be noted that it is disadvantageous for the manager to do work for preparing items for certification for the state Emblem of Quality as compared to work for reducing the production cost of items, for the increment that is received in the final analysis turns out to be considerably less than above-normative profitability obtained from reducing the production cost of the product. Here one must take into account that the additional profitability resulting from this is received by the enterprise without any coordination or approval at higher levels, and it reaches 100 percent and more.

The next important question concerns the dependency of the manufacturer on the final consumer.

If one excludes from consideration the return of completely rejected products to the manufacturer, the manufacturer is practically not dependent on the

results of the final sale of the product. This pertains especially to consumer goods when the delivery plan has been fulfilled and the enterprise is not very interested in whether there is a demand for its products or not. After all, the wage fund and the material incentive fund do not depend on final product sales. In the existing practice the manufacturer is not very interested in producing and putting out precisely those products which the consumer needs. If one takes into account the fact that practically every plant that manufactures products is, in turn, a consumer for another plant and depends on the quantity and quality of products delivered to it, under these conditions it is not at all simple to display initiative and take on commitments and responsibilities for satisfying the demand for product quality.

Fortunately, the situation in this problem is fairly stable and therefore one can give an extremely instructive example as an illustration.

In an article entitled "He Who Takes a Risk Wins" (PRAVDA, 2 October 1983) it was noted: "The Orsha sewing workers decided to try a path no one had ever taken before. They suggested that their trade partners introduce into the text of the delivery agreement the following point: in the event that 30 percent or more of the items of any model are not sold within a period of up to 3 months the purchaser (trade organization--editor's remark) has a right to return them to the factory. The factory commits itself to changing the products on the spot. All expenditures on exchange and subsequent sales of the items that are returned will be made by the factory...." We think that all manufacturers should do exactly this. But what happened as a result? As a result there was a sharp increase in the return of items, although at the same time there was also an increase in the volume of new models that were being annihilated--from 35-40 before the experiment (per year) to 210. What was happening? It turned out that the factory, having begun the experiment, did not support its "rear"--that is the quality and assortment of the fabrics. The rates of updating of the fabrics at the factory was in the range of up to 10 percent per year. Compare--210 models (about 50 percent) per year or 10 percent! As a result, the following sad picture of returns was received:

1981	3,500 items (111,000 rubles);
1982	32,000 items (857,000 rubles);
1983	64,800 items (2,037,000 rubles).

The reader can imagine without any special difficulty what economic, material and moral incentives began to act on the collective of workers at the factory under these conditions.

It was a very good beginning, an extremely sad end. And the factory probably received assistance with the fabrics. But what about the other enterprises?

Engineer-economists established long ago that in the system of control, including control of product quality, it is not enough to change one unit--it is necessary to change all units. If the factory changes over to new economic interrelations with a consumer, analogous changes must also be made for the suppliers to the factory, the system of incentives and planning must be changed, and so forth.

In the example given above the management of the factory decided to introduce a system of product quality control not in form, but in essence, and they managed to do this. But the economic dependency on the supplies made it impossible to obtain the expected effect, for these changes were not made throughout the entire chain: raw materials--processed materials--prepared products. In this connection we should like to touch upon a couple of general issues pertaining to the effectiveness of the system for controlling product quality.

During the 1950's and 1960's in the country there was extensive dissemination of various systems for ensuring the quality of products and labor (the Saratov, the NORM, KANARSPI, SBT and others) which initially produced an effect as a result of better organization of production, strengthening of production discipline, a higher professional level, greater interest and responsibility on the part of the workers, and so forth.

But with time their effectiveness declined and they were no longer able to exert a significant influence on the quality of products and labor. An analysis of the content and experience in the introduction of these systems shows that they were not effective enough because they did not involve the basic levers for management of production--planning, financing, evaluation and incentives for enterprises, the wage system, the interrelations between developer and manufacturer, and so forth.

The situation is somewhat different with respect to comprehensive systems of product quality control (KSUKP). These systems involve restructuring the basic levers of the economic mechanism so that they will have a more effective influence on product quality. But the development and introduction of these systems have proceeded along the path of creating a set of standards which resolve only organizational and technical issues, and mainly at the level of the enterprises. Economic and legal questions ended up outside the purview of these documents. In practice only the USSR Gosstandart took on the difficult work of introducing them. Neither the USSR Gosplan, nor the USSR State Committee for Labor and Social Problems, nor the USSR State Committee for Prices, nor the State Committee for Science and Technology participated in this work and, as a result, the effectiveness of these systems also turned out to be low.

The example of the Orsha Sewing Factory confirms the need to solve one more problem: elimination of the existing lack of correspondence between the requirements for quality of the initial processed materials and the items made from them. Closely related to this problem is the question of the immense difference between the model of the item and its series analogue. At exhibitions we have all fallen in love with beautiful items and materials--clothing, footwear, fabrics, equipment, dyes, synthetic items and furniture. But what fate awaits these models? In the first place, none of them do not go into series production for a number of reasons. Some of them do, but in a quantity so that it is practically impossible to find these items in the stores. Well, but some of these models will be produced in sufficiently large series, but it will be difficult to recognize the exhibit items in these. When assimilating new models there are deviations from the designs, the

established initial material and the given technology, which also nullifies the labor of the developers of the model. It would be expedient to change the way these exhibitions are conducted and organize two kinds of them: future items and new items. At exhibits for future items they would present models that have already been developed but are only just earmarked for output, and at the exhibition of new items—only items that have been assimilated by industry during the year when the exhibition was organized. Additionally, at the exhibitions of new items they should in parallel exhibit analogue models created before the beginning of series production in order to see what changes these models have undergone. All kinds of prizes, awards, certificates and so forth should be awarded only according to the results of the exhibitions of new items with unconditional correspondence of series models to the exhibited model. The exhibitions of future items should be informational and serve as one of the bases for forming orders for industrial production.

It is necessary to realize a second principle. Either high-quality products are produced or production is halted. Losses arising here will more than be recouped by reducing losses from transferring materials resources into completely defective production.

The last question we should like to raise is the problem of protecting the interests of the consumers.

It seems expedient to us, for purposes of more effective support and protection of the interests of the consumers of industrial products and increased responsibility of the manufacturer (developer) to create a "Society of Consumers" analogous to scientific and technical societies. This society could be responsible for evaluating the quality of industrial products that come in from the trade network to the population, revealing products that are of poor quality and for which there is no demand, and forming public opinion and, to a certain degree, also demand.

In order to carry out these tasks one could grant the society the right to organize exhibits of high-quality goods, and also exhibits of low-quality goods; participation in commissions for receiving experimental design work in certifying consumer goods; conducting questionnaires of public opinion; preparing and submitting proposals for changing lists (assortment) of consumer goods and their quality to the planning agencies of the branches of industry; providing control of the bodies of public inspectors of product quality in the trade network and industry; and publishing a special bulletin reflecting public opinion concerning the quality of consumer goods.

FOOTNOTE

1. Here and henceforth consumers are considered to be individual consumers and organizations that acquire products in the trade network.

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CERTIFICATION OF DESIGNS SUGGESTED

Novosibirsk EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA (EKO) in Russian No 7, Jul 86 p 96

[Article by V. N. Tishchenko, candidate of economic sciences (Kharkov): "Introducing Certification of Design Schemes"]

[Text] At the present time the certification of product quality is done in the stage of series output. High-quality items are considered to be those with a high level of consumer qualities. And in this stage it is too late to reject products in which technically outdated solutions or design schemes have been used since considerable funds have already been invested in their production. The system of departmental and extradepartmental expert evaluations to some extent puts up a barrier against the output of certain obsolete items. But with expert evaluations there are no economic incentives or sanctions.

In order for the highest quality category to be earned by products that not only have a high level of consumer qualities but are also created on the basis of progressive technical decisions, in our opinion, it would be expedient to introduce certification of the design schemes in the stage of scientific research and experimental design work. There is now intraplant certification of technological processes, parts and assembly units, and this should also be introduced for NIOKR. Then, in the first place, a barrier would be put up against the creation of obsolete technical equipment in the stage of planning, and, second, the certification within the enterprise would encompass all stages of the work on the item.

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RECOGNITION OF DEFECTIVE WORK URGED

Novosibirsk *Ekonomika i Organizatsiya Promyshlennogo Proizvodstva* (ENO) in Russian No 7, Jul 86 pp 97-98

[Article by L. F. Sukhodoyeva and M. V. Garbunova, teachers at the State University (Gorkiy): "Not Closing One's Eyes to Defects"]

[Text] For a long time the percentage of defective work was practically the only measure of the works of the enterprise in the area of quality, which is quite predictable since its indicator, on the one hand, registers cases of deviation from the given parameters of quality and, on the other, is reflected in bookkeeping in the value form of losses. But with the appearance of quality control systems people began to forget about this.

The following became the main parameters. The output of products of the highest quality category; the quality of the labor of workers, since bonuses were related to this indicator; the number of complaints, and the quarterly Report Form No III (Quality) which is prepared by the technical control service.

Defective work, as before, was registered and on the basis of data from bookkeeping entries, was entered in the column "defective work in production" and then on Form No 6 of the annual report (Section V, "Losses From Defective Work and Wastes"), but interest in it decreased.

An investigation of seven machine building enterprises of Gorkiy showed that it is usual for assignments for reducing expenditures on defective work to be submitted only to the technical control department, and the shop technical control bureaus do not know about it. A comparative analysis of the amount of losses from defective work in percentages of the production cost of the growth output showed that only for enterprises that do not have assembly shops is this indicator in the vicinity of hundredths of a percentage point, and for the other shops it exceeds 0.5 percent, reaching 2.29 percent for more complicated and responsible products.

In our opinion, the time has come to critically interpret what has been achieved in quality control and regulate the system of evaluation indicators without letting defective work slip from the field of vision. Even the indicator of complaints does not quite precisely reflect the true state of

affairs with defective work. If a defect can be eliminated through the forces of the consumer, he does not make a complaint. Why start a conflict with the supplier? And when the supplier and consumer have longstanding or fairly broad ties, the conflict is regulated by mutual agreement and is never documented. And, finally, the supplier tries in all ways not to admit the correctness of the complaint that is made since this deteriorates his indicators.

The indicator of complaints should be made more objective. It characterizes the attitude toward the enterprise's product in the external world. But one cannot refuse and reduce the effectiveness of the indicator of defective work as one of the most reliable indicators of the quality of work of the subdivisions and performers within the enterprise, which also reflects losses in production. In order to increase its influence it is necessary to account strictly for semimanufactured goods that are put into production. And such accounting is far from always in existence.

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WAYS OF IMPROVING NATIONAL ECONOMY SUGGESTED

Novosibirsk *Ekonomika i Organizatsiya Promyshlennogo Proizvodstva* (ENO) in Russian No 7, Jul 86 pp 100-116

[Article by Sh. B. Sverdlik, doctor of economic sciences, professor, department chief of the Novosibirsk Institute of the National Economy: "The Enterprise and the Bank"]

[Text] The Basic Directions for the Economic and Social Development of the USSR During 1986-1990 and the Period Up to the Year 2000 emphasize the need to strengthen conditions for economy, to extend all kinds of resources efficiently and economically, and to reduce losses of these.

During the first 3 years of the 11th Five-Year Plan the savings on raw material, processed materials, fuel, energy and other objects of labor amounted to 10.6 billion rubles,¹ while circulating capital in supplies of commodity and material values increased in industry by 31 billion rubles.² There was an incomparable increase in supplies of industrial products in warehouses of supply agencies and trade organizations. Material circulating capital in state enterprises and organizations per 1 ruble of national income used for consumption and accumulation increased from 69 kopecks in 1980 to 70 kopecks in 1983.³

The Supply Does Not Weigh Down the Pocket

Acceleration of the turnover of circulating capital is one of the factors in intensification of production. It can be achieved only under the condition of extensive introduction of extensive technology and technical equipment, advanced methods of controlling production and circulation, and continuous improvement of the quality of labor and products. The effectiveness of the utilization of circulating capital depends directly on the fulfillment by the enterprises of plans for the delivery of products and assignments for increasing labor productivity and assimilating production capacities, and at the same time it exerts a certain influence on the fulfillment of the indicated plans and assignments.

An acceleration of the circulation of material circulating capital in the industry by only 1 day is tantamount to increasing the volume of products by 1.5 percent without additional capital investments. A retardation of

circulation withdraws from economic circulation the material resources necessary for raising the standard of living of the population. The accumulation of above-plan, surplus and unnecessary supplies of raw and processed materials at certain enterprises leads to idle time of the labor force and equipment at other enterprises.

Increasing the effectiveness of the utilization of circulating capital is a universal national economic task. But the banks are at "greater pains" than other planning and control agencies to accelerate the circulation of this capital. By the beginning of 1985 short-term bank loans to industry reached an immense sum--100.9 billion rubles or more than 60 percent of all the circulating capital. For comparison let us say that in 1950 this proportion amounted to 33.1 percent, in 1960--39.2 percent and in 1970--43.6 percent.⁷

A retardation of circulation and the withdrawal of material resources from economic circulation which this causes are the primary cause of the appearance of late payments on loans and this forces the bank to take out a considerable proportion of the loan fund to provide for accounts between consumers and suppliers. But, judging from numerous articles, the existing forms of bank controls with the ruble over economic and financial activity of enterprises do not satisfy both sides. Bank economists note frequent cases in which the enterprises violate credit, accounting and financial discipline and many enterprises take an irresponsible attitude toward the utilization of circulating capital and bank credit. Economic managers are dissatisfied with what in their opinion is trivial red tape on the part of bank institutions which limit their independence.

The main stumbling block is the evaluation of the results of the economic activity of the enterprises. Normative documents for the large-scale experiment determine the list of planned assignments whose fulfillment is taken into account by higher organizations and local agencies when evaluating the economic activity of associations and enterprises. Thus when summing up the results of the work and socialist competition of associations (enterprises) of the electrical equipment industry one takes into account the fulfillment of planned assignments for the volume of product sales on the basis of contractual commitments for deliveries, for the development of science and technology, the higher technical level (quality) of products, increased labor productivity, reduction of expenditures on production, and introduction of new production of capacities and facilities. With small variations similar lists of evaluation indicators have been established for enterprises of other industrial ministries that are operating under the conditions of the given experiment.

The fulfillment by the enterprises of planning assignments for the established limited range of indicators gives them the right to a number of privileges when utilizing bank credit. But these privileges are in effect up until the point when the reasons for the financial difficulties of the enterprise are of a temporary nature. The principles established in the 1930's for the time periods and the return of credit have not been abolished, and, conversely, they have been confirmed again in the "Basic Provisions Concerning Bank Credit," approved by the USSR Council of Ministers in 1982. Guided by these provisions the banks limit or completely curtail the issuance of new loans to

enterprises that are violating credit discipline. Enterprises that have fulfilled or overfulfilled planning assignments with respect to a number of evaluation indicators also fall into the category of those being fined. In practice there are frequent cases when the ministry awards an enterprise a class position and large bonuses from the results of socialist competition but the bank removes this enterprise from credit and applies other sanctions against it.

Credit levers are directed mainly toward stimulating acceleration of the circulation of material resources and circulating capital invested in them. By exercising control over how effectively the enterprises utilize credit in circulating capital, the bank pursues no narrow departmental goals but achieves an increase in the return from public labor which is embodied in circulating capital and funds for circulation.

Yet the enterprises themselves and their higher organizations are fairly inert when it comes to this important national economic problem. The fuller the warehouse the less the concern of the economic managers about fulfillment of the production plan with respect to volume and products list. Surplus warehouse supplies also serve as a reserve for covering losses of material resources in defective work and wastes, in the event that it is possible to exchange one "shortage" for another, and they serve as the token of gratitude to local organizations for assistance rendered to kolkhozes and the city economy.

The manager thinks about the harm of surplus warehouse supplies when he discovers that the material resources that are in short supply for fulfilling the production program lie in another's warehouse. Fortunately (or unfortunately), the volume of information concerning surplus resources is purely random and episodic in nature and, having obtained it, the economic manager is most frequently inclined to blame his suppliers for inefficiency and a lack of real power.

It has been theoretically presumed that payment for normed circulating capital for which there is no bank credit and interest on credit should, through profit, influence the reduction of deductions into the economic incentive fund. These hopes have not been justified, which is shown not only by the examples of individual enterprises, but by the more weighty evaluation of indicators of industry as a whole. In 1983 the material circulating capital of industry increased by 7 percent and payments from profit to the budget and bank for increased supplies amounted to approximately 600 million rubles which is equal to reducing the production cost of the products by only 0.1 percent. With this kind of attitude toward the "weight" categories, the task of accelerating the turnover of circulating capital remains practically beyond the field of vision of economic managers and the additional payments into the budget and expenditures for paying for bank credit and penalties to the suppliers cannot neutralize the advantage of above-normative supplies.

When considering the results of the activity of enterprises under their jurisdiction many ministries and main boards do not pay any attention to the failure to fulfill assignments for accelerating the turnover of circulating capital. Moreover, according to the conditions of the experiment, the

ministries have been given the right to take from the enterprises 3 percent of the value of above-normative commodity and material values and uninstalled equipment that has not been bought with bank credit. The ministries have not taken advantage of this right and it has been necessary to transfer it to the USSR Ministry of Finance.

We shall not close our eyes to reality: as long as the supply does not weigh down the pocket, it, that is, the supply and not the pocket is "doomed" to inevitable growth. Any system of evaluation has the property of moving to the background all indicators that are not included in this system. As soon as the amount of the material incentive funds and the prestige of the director depend on the fulfillment of indicators "A", "B" and "C", he is prepared for the sake of them to sacrifice all the rest of the indicators right up to "Z," inclusive. It is precisely here that we find the root of all conflicts that arise between the enterprises and the banks.

When There Is no Agreement in Indicators

For the reader who is removed from the supply business there naturally arises a legitimate question: Where do they get above-normative supplies and surplus and unnecessary material values if the basic kinds of material resources are allotted to the enterprises strictly according to the funds and orders, and the enterprises have to "scare up" each ton of metal and other resources with immense amounts of work?

Ostat Bender stated that he has 400 relatively honorable ways of removing or "lifting" other people's money. An experienced supply worker has in his arsenal thousands of relatively honorable ways of obtaining more material values from state funds than he actually needs. It is possible to increase the expenditure norms, especially for newly assimilated products, and the average weighted group and experimental-statistical norms. It is possible to reduce the residuals of materials and batching items expected in the warehouse and in incomplete production at the beginning of the planning year and, conversely, to increase the carryover residual for the end of the year. Most frequently these "mistakes" go unnoticed for to check on the substantiation of the calculations of tens of thousands of production associations, construction projects and other consumers of material and technical resources on an immense products list which includes hundreds of thousands of names is a job that is beyond the capabilities of even the largest computers of the very latest generation. Essentially, control is limited to large "shortage" positions in the balance of material resources. Moreover, an increased order is not a write-up, and is not criminally punished.

It would not be an exaggeration to say that the accumulation of surplus supplies of material values and the retention of internal circulating capital and other disproportions which have a negative effect on the financial activity of the enterprises and their ability to pay take form even in the stage of the development of technical and industrial financial plans. Recent normative documents have repeatedly emphasized the need to provide for stability and balance of indicators of the five-year and annual plans for the development of the national economy at all levels, but we have not managed to achieve a decisive change in this area yet. An unbalanced plan is a

convenient screen for writing off all management errors and therefore the ministries and main boards except from the enterprises drafts of plans in which the income does not equal the expenditure, and from time to time the enterprises do not notice obvious lapses in planning assignments that are established from above. The coordination of planning indicators, especially physical and value indicators, is not anything extraordinary, but a normal "game of pressure" between the enterprise and its higher organization.

The Sibelektroterm Association, which entered the large-scale economic experiment at the beginning of 1984, accepted for execution a plan established by the higher organization in which the volume of product output in the products list exceeded the commodity output in wholesale prices by 15 percent. Using the products list plan they ordered materials, batching items and equipment, which was a fairly good support for fulfilling the value plan for product output. For the first three quarters in a row, the association did not fulfill the plan for the products list, but accurately reported 100 percent fulfillment of contractual commitments since the orders for sales the deliveries are indicated not for the month and not even for the quarter, but for the half year or the year. At the end of the year the higher organization has "recognized" its mistake and has excluded the excess pieces from the products list plan, but the association has agreed with the clients to transfer the delivery deadlines to the next year. To be sure, instead of planned acceleration of the circulation of normed circulating capital by 3.2 days, there was a retardation by 49.3 days and a total of about 6 million rubles were taken in commodity and material values were taken out of economic circulation, for which the budget, the bank and the suppliers were paid a total of more than 600,000 rubles in fines. Nonetheless, according to existing conditions the association has been given the right to additional deductions into the material incentive fund in an amount of 15 percent in excess of the sum envisioned in the financial plan.

A similar situation exists in the Elektroagregat Association. The quality of the plan is shown at least by the fact that its indicators in 1984 were "refined" 32 times. For this reason the supplies of material values exceeded the normative 1.5-fold and the interest paid on credit was twice as much as was planned. But neither the material incentive funds nor the bonuses for management personnel suffered from this.

Inspections by bank enterprises of Novosibirsk Oblast in 1984 established the unsubstantiated reduction of sales plans for 15 enterprises in heavy industry by 9 million rubles, and in 1985--for 29 enterprises by 31 million rubles. Only one ministry responded to the results of these inspections and brought the sales plan into line with the real capabilities of the enterprises under its jurisdiction, and the remaining enterprises said and wrote nothing about this.

The neglect of accounting, the very thing that is considered to be the mirror of the economic activity of the enterprise also makes its contribution to the discoordination of planning indicators. Mirrors are sometimes also distorted....

The currently prevailing boiler method of accounting for expenditures on production makes it possible within a wide range to maneuver proportions of their distribution for prepared products and incomplete production. The lack of systematic accounting for parts and components again creates favorable conditions for writing off as incomplete production defective work, nonliquid assets and other discharge expenditures or simply write-offs. One might say that this kind of accounting is advantageous to the enterprise from all standpoints. With its help workers of the enterprise "control" the fund-forming indicators and regulate the amount of the overall and material resources per ruble of commodity output as well as the increase in labor productivity and monetary accumulations.

It has become an unwritten rule to conduct a real inventory of commodity and material values when a new director comes to the enterprise "from the outside." The Novosibirsk Association's Tyazhstankogidropress and Sibselmash after these inventories wrote off as losses considerable sums of materials, semimanufactured products and prepared items. But what happens to the "old" director who himself has put his hand to accumulating these "values"? All he can do is act as though they do not exist in nature. Therefore the above-normative residuals of commodity and material values accounted for in the bookkeeping balances of the enterprises at the beginning of the planned year are not included in the calculations for material and technical supply or the production and sales of commercial products.

It is clear even to someone who is not an economist that if the plan is drawn up with errors, if its indicators are not coordinated with each other, it is inevitable that there will be a financial disparity and a lack of balance between the monetary incomes of the enterprises and their expenditures which, in turn, gives rise to an increased demand for bank credit. The lack of order of the system of planning sources for financing circulating capital also contributes to this.

Loans or Manna From Heaven?

The principles for the organization of circulating capital that originated at the beginning of the 1930's were directed toward providing for economic independence of enterprises and for their responsibility for the production and financial results of their activity. The state economic organizations were allotted their own circulating capital in amounts necessary for forming minimum supplies of raw materials, processed materials, fuel, semimanufactured products and incomplete production, prepared items and goods, and also investments in expenditures of future years.

The Council of Labor and Defense, by a decree of 23 July 1931, clearly determined the limits of bank short-term credit for circulating capital. The credit should be granted only for needs related to advancing seasonal processes of production, accumulating seasonal supplies of raw materials, processed materials, prepared products and goods and for other temporary needs ensuing from the course of production and circulation of commodities. The loans are granted strictly according to a special purpose for a particular, clearly established time period, with the guarantee of their return after the expiration of the time period and commodity and material values as collateral.

to test the principles named above for organizing circulating capital suited both the industrial enterprises and the banks. Credit for commodity and material values was used mainly by the enterprises of seasonal branches of industry with a short production cycle and guaranteed sales of the final products. The normatives of internal circulating capital of enterprises of nonseasonal branches and especially heavy industry were sufficient to form nonreducible residuals of commodity and material values, and they resorted to bank credit only in exceptional cases. By 1950 68 percent of the material circulating capital of the industry was covered by its own funds. In subsequent years the proportion of internal circulating capital in material supplies began to decrease sharply: in 1960 it amounted to 60 percent, in 1970 --about 49 percent, and in 1980--41 percent.⁵

In practice the enterprises do not independently determine the need for internal circulating capital and they do not augment these funds from their own profit, which has led to a gradual separation of the normative from the value of minimal nonreducible supplies of commodity and material values.

In keeping with the decisions of the July (1960) Plenum of the CPSU Central Committee and the subsequent decree of the USSR Council of Ministers of 1962, "On Improving Norm Setting for Circulating Capital of State Enterprises and Organizations," through the forces of many scientific research institutions, a library of provisions has been created for the development of norms and normatives for circulating capital. The calculations introduced in this period have raised the level of provision of enterprises with their own circulating capital, but interruptions soon began to return for the existing policy of centralized planning of sources of financing the increase of these funds had not been abolished.

The decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979, "On Improving Planning and Stepping the Influence of the Economic Mechanism on Increasing the Effectiveness of Production and Improving the Quality of Work," made it incumbent on industrial ministries of the USSR, with the agreement of the USSR Ministry of Finance, to establish economically substantiated normatives for circulating capital and, under the 11th Five-Year Plan, to bring the amounts of circulating capital of production associations (enterprises) in line with the indicated normatives. Facts show that this time the ministries were guided by immediate financial considerations, not thinking about future planning based on economically substantiated norms and normatives that would be in effect for a long time.

The economy will not tolerate a vacuum. The missing circulating capital has gradually begun to be replaced by borrowed money. The circumstance that the overall need for circulating capital is generally not planned has also contributed to this. In the annual financial plan approved by the higher organization, they envision sources of increasing the normative of internal circulating capital, and in quarterly credit plans of the banks--limits (or control figures) for indebtedness on loans for above-normative seasonal and other special supplies in the cross-section of the branches and enterprises, and depersonalized limits on credit for temporary needs. As we know, too many cooks spoil the broth.

Granting credit to enterprises of nonseasonal branches of industry for circulation has become widespread. The bank takes from the enterprise half of the normative internal circulating capital and in exchange opens a special loan account for it to pay for acceptance account documents for the acquired material values and services for its basic activity and issuing funds for wages.

The policy for issuing loans for above-normative residuals of commodity and material values has been simplified. While previously the enterprise had to prove to the bank that the excess of the normative was temporary in nature and therefore the requested loan would be repaid within a time period of 10 months, now the bank must prove to the enterprise that the existing above-normative residuals cannot be covered by credit either fully or partially for they contain unmarketable, leftover, incomplete, nonstandard, surplus, unnecessary and other material values that are not eligible for credit.

Especially popular among the enterprises are the so-called payment credits which are granted by the banks for payment of account documents for material values and services when there is a shortage of funds in the accounts. Initially the borrower was obligated to repay the credit within a month, but then the time periods for the use of the money were gradually increased to 4 months. Added to this is credit granted for settling accounts for mutual demands. The worse, the better, thinks the experienced manager and he accumulates for the next interministry account, usually conducted at the end of the year, the sum of extended payments to suppliers so that as a result of account credit he can live well until May of the following year. There has been a tendency toward crowding out planned credit for above-plan commodity and material values with payment and account credit, for which the bank does not check at all on the special-purpose utilization. In what way is this not manna from heaven?

K. Marx said that the easier it is to obtain a loan the more people obtain them. Economic managers have lost their taste for their own circulating capital, which had to be earned, and they are continuing to obtain from the "miserly knight" sitting in the bank removals of even those small restrictions which remained for extending credit to enterprises that regularly fail to fulfill their economic and financial commitments, and primarily unimpeded payment with credit for all documents for commodity and material values and services.

It should be emphasized that there is a certain reason for this requirement. The sanctions applied for poorly operating enterprises in the form of removal from credit or curtailment of the issuance of payment credit has a ricochet effect throughout all of its suppliers, who are fulfilling their contractual commitments precisely. They do not have a right to send the products to other purchasers and stopping the shipments to customers who do not pay their bills undermines the fulfillment of the plan for sales and profit. It is enough for even one enterprise to "declare itself insolvent" even for a short period of time for the chain to threaten the solvency of dozens and perhaps even hundreds of economic agencies that are guilty of nothing. The party who suffers is even the state budget which fails to receive part of the planned

revenue from turnover tax and payments from profit. The bank must make a compromise, the sanctions are removed and again the loan money covers all financial gaps of the enterprise. To develop financial and credit relations and strengthen payment discipline in the national economy--these are the tasks set by the Basic Directions for the Economic and Social Development of the USSR During 1986-1990 and the Period Up to the Year 2000.

The Economic Mechanism and Bank Control With the Ruble

The economic mechanism is not only and not so much a summary of laws, provisions, instructions and so forth, but mainly the ability to take advantage of the right granted by these documents in order to achieve high final results in the area of labor activity with which one is entrusted and a keener sense of responsibility for these results.

Obviously, with time it will be possible to develop a plerid of economic managers who have all of the aforementioned qualities and create an atmosphere within the labor collectives wherein external control over economic activity will no longer be necessary. But for the time being external control must be improved, it must be made more effective and at the same time it is necessary to expunge from it elements of formalism and favoritism which, as was pointed out at the April (1985) Plenum of the CPSU Central Committee, separate people from their work and create a nervous situation.

In what direction should the forms and methods of bank control improve under the conditions of the large-scale economic experiment? Let us try to answer this question without claiming, naturally, that our suggestions are indisputable.

One of the main elements of the concept of restructuring the economic mechanism suggested by the party is the introduction of true cost accounting. Are we correct in thinking that an enterprise has cost accounting when there is no balanced plan or well-arranged accounting? It is purely a rhetorical question for the plan and accounting are two buttresses on which the entire system of cost-accounting activity of the production collectives rests. There are more than enough decrees and decisions concerning enlisting workers for participation in the development of five-year and annual plans even now. What additional rights do managers need in order to provide for reliable report data and introduce progressive forms of normative accounting, which have been under discussion for more than one decade?

Let us imagine this picture. The bank, with the participation of financial agencies and, if necessary, enlisting specialists from scientific research and higher educational institutions, just before or at the beginning of the year checks on the balance of physical and value indicators of the plans for material and technical supply, production, deliveries and sales of products, the financial plan and so forth. Having discovered a disagreement among these indicators, the people doing the verifying report this at a general meeting of the collective and give a warning that the bank will stop paying all the bonuses due to the enterprise until this matter is put in order. A similar measure of influence can be sanctioned by legislation with respect to enterprises that neglect accounting and distort reports. Indeed, what is the

justification for a bonus if the plan is not a plan and the account is not an account!

I can foresee the objection that the balance indicators come "from above" and the lower levels suffer for the sins of the higher levels. But if the collective, on the basis of an analysis conducted by "efficient economists," reject the established but unbalanced planning indicators, the "efficient" administrator will be obliged to rectify the situation. It is precisely this kind of cooperation between economists and administrators that V. I. Lenin contrasted to the production of meaningless theses.

Including the banks in the verification of this substantiation and balance of the plans of the enterprises is not an innovation; it is already being practiced, and fairly successfully, in many interrelations between USSR Stroybank institutions, builders and contracting organizations. This, of course, does not mean that the bank will dictate to the enterprise which product to produce and whom to sell them to, which material resources to order and so forth. The solution to these and other production, technical and commercial problems remains fully within the competence of the economic managers of the corresponding level with only one condition--the indicators of the plan must be coordinated and incomes and expenditures must be balanced.

Let us trace the possible effect from shifting the center of gravity of bank control with the ruble from the subsequent stage, where it is exercised at the present time, to the preplanning stage. Orders for material resources are distributed by the enterprises long before the establishment of the plan for the output of products and completion of the portfolio of orders and contracts for delivery. The data from the analysis we conducted show that only in terms of this principle does the declared need for material resources exceed the real need calculated for the established list of products to be produced by no less than 20 percent. The enterprise has the right to adjust its preliminary orders, but it rarely does this because of the labor-intensiveness of the calculations and in the hope that the bank will grant the credit anyway. At some point in the middle of the year the cat gets out of the bag: the bank begins with warnings and ends with sanctions. But the bank is no longer able to stop the income of surplus resources to the enterprise--the supply conveyor cannot be turned back.

Preplanning control can warn about the appearance of these disproportions and at the same time it creates conditions for more complete utilization of the advantages of credit methods of supplying the needs of enterprises for circulating capital. Having been convinced that the overall cost of the material resources ordered for the enterprise does not exceed the actual needs for them (for the output of products, increasing carryover supplies and other needs) and that the sale of all the products planned for output is provided for by agreements and orders, the bank concludes a credit agreement with the enterprise. It stipulates:

a) the limit on income of material values within the range of which the bank without question pays from the account, and when there is no money in it--from a separate loan account, all bills accepted by the enterprise for material values and services;

b) the time periods for using credit in keeping with the calculated duration of circulation of the normed circulating capital;

c) the sum of the additional need for credit for commodity and material values formed because of the removal from production of outdated items, the assimilation of the output of new products, improvement of the technological process, and temporary reduction of the production volume during the period of reconstruction and modernization of equipment.

The credit agreement should also stipulate the issuance of the loan for the payment of wages and bonuses within the limits of the sums due to the enterprise and for other production needs. On behalf of the enterprise the credit agreement is signed by representatives of the administration and the trade union organization who are authorized to do this.

The technical aspect of the proposed approach to restructuring interrelations between the enterprise and the bank would hardly be of interest to a broad range of EKO readers. Another thing that is important: strengthening preliminary control over the balance of planning indicators expands the possibilities for the enterprises to maneuver, relieves them from their Big Brother relationship with the bank and at the same time prevents using bank credit for surplus and unnecessary supplies of commodity and material values.

The consistent implementation of decisions of central agencies concerning the introduction of the normative method of distributing profit will also contribute to expanding the independence of the enterprises. So far profit that is officially left at the disposal of the enterprises (after paying all the planned payments into the budget) recorded by the higher organizations under various items--for financing capital investments, the economic incentive fund, and so forth. It is necessary to entrust the enterprises to determine independently the need for circulating capital and to augment these funds with profit left at their disposal. This will make it possible to release credit resources that have been tied up in undiminishing supplies of commodity and material values and to use them to expand the output and improve the quality of products that are in demand among the consumers.

And the last thing. There is an immediate need to unify the system of evaluation of economic activity of the enterprises. When one control agency gives an enterprise encouragement for good work and another punishes the same enterprise for poor indicators, executive discipline and the interests of the state as a whole suffer. It is necessary to arrange this system in terms of final results of the work, which are the fulfillment of all the commitments to the consumers, the state budget, the bank and the suppliers of material resources.

FOOTNOTES

1. EKONOMICHESKAYA GAZETA, No 1, 1985, p 5.

2. "Narodnoye khozyaystvo SSSR v 1983 g." [The USSR National Economy in 1983], Moscow, "Statistika", 1984, p 542.

3. Ibid., p 409, 542.

4. "Narodnaya khozyaystvo SSSR v 1965 g.", Moscow, "Statistika", 1966, p 752;
"Narodnaya khozyaystvo SSSR v 1970 g.", Moscow, "Statistika", 1971, p 710;
"Narodnaya khozyaystvo SSSR v 1980 g.", Moscow, "Statistika", 1981, p 511;
"Narodnaya khozyaystvo SSSR v 1983 g.", Moscow, "Statistika", 1985, pp 558,
580.

5. Calculation from sources indicated in footnote 6.

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BENEFITS FROM MANAGEMENT CONSULTING RELATED

Novosibirsk *EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA* (ENO) in Russian No 7, Jul 86 pp 117-129

[Article by A. Ye. Luzin, candidate of economic sciences, Moscow State University: "Increasing Receptiveness to Innovations"]

[Text] Aleksandr Yevgenyevich Luzin has been employed in management consulting for more than 15 years and is working in this area as a part of the Commission for Management Consulting under the VSNTO [All-Union Council of Scientific Engineering and Technical Societies]. He worked abroad for 5 years as a management consultant for the International Organization of Labor. We offer the readers his article in which he shares his reflections.

At the June (1985) Conference of the CPSU Central Committee increasing receptiveness to innovations was named as one of the most important conditions for accelerating scientific and technical progress. In solving this problem the attention of many organizations has traditionally been concentrated on searching for ways of multiplying the forces for introduction and, perhaps, therefore there has been no time left to think about possible alternatives. But they exist, and the most obvious and logical alternative is "approaching from the rear" in order to reduce the influence of the forces of rejection (see Fig. 1).

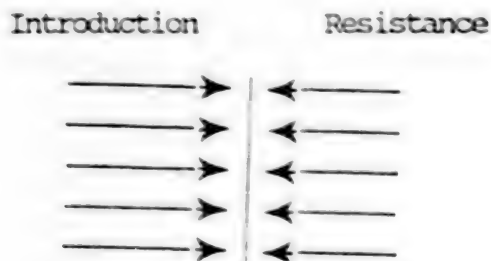


Fig. 1. "Power fields" of the process of innovation.

Sometimes one gets the impression that the rejection of innovations in enterprises and organizations is generated by exceptional sluggishness, bureaucracy, laziness and other subjective factors. On the pages of magazines one can always find the image of the "red tape artist," the "enemy" of new technical equipment. Without trying to diminish the vital importance of this image and its fatal influence on the destiny of innovations, nonetheless let us be so bold as to assert that in the majority of cases the basis of the forces of rejection of innovations are composed of objective factors. In real life the difficulties of innovations are like the difficulties of a passenger who is trying to jump onto a rapidly moving train. In this case the train is the basic production process.

As follows from Fig. 2, the innovative and the stage production processes have a number of radical differences which make the task of combining them extremely difficult and in some cases practically impossible. In the majority of cases, the managers of enterprises and personnel resolve the contradictions that arise between them in favor of the production process which determines the course of the fulfillment of the plan.

Innovation Process		Stable Production Process
Discrete, cyclical	Type of process	Continuous, homogeneous
Transfer of system to new level	Target orientation	Maintenance of a given level
With significant time lag	Goal is achieved	On the real time scale
Inevitable, in proportion to the degree of newness and scale of innovation	Possible risk	Minimal
Enters into contradiction	Norms and provisions	Based on these
Violates	Distribution of authority and roles	Stabilizes

Fig. 2. Several Differences Between Innovation and Ordinary Production Processes.

The solution to the problem lies on the path of reducing the contradictions between the given processes: on the one hand, as a result of optimizing the cycle of introduction and on the other, through increasing the flexibility and innovative receptivity of the production system. That is, using the analogy to the train once again, one should organize things in such a way that, without getting the train off schedule, it will be possible for the passenger in one way or another to take a seat in the car.

If we break down the organizational mechanism of the enterprises into individual subsystems and elements we can weigh the extent to which in this case (under a structure) they meet the requirements of advancing innovations and also path to increasing the innovative potential of the elements under examination. The table gives the structure of the innovative potential of the organization. Although the picture that is presented is far from exhaustive, nonetheless it makes it possible to draw certain conclusions. First, that the innovative process penetrates the entire organization and exerts one or another kind of influence on practically all subsystems and elements without exception. The second important conclusion is that the increase in the innovative potential is achieved mainly as a result of increasing the flexibility and adaptive capacity of elements of the organization.

Even a quick analysis of the table provides justification for drawing the conclusion that increasing the innovative potential involves considerable problems. The situation is complicated also by the fact that increasing the potential of one element or another frequently enters into contradiction with the condition of the system as a whole, and this leads to the appearance of tension and conflict. Thus, for example, the introduction of flexible organizational forms of the type of the matrix structure without changing the evaluation and payment for workers, the style of management or the communications network almost inevitably causes rejection of the given innovation. The conclusion: before beginning to increase the innovative potential it is necessary to have a clear idea of the nature, the depth, the frequency and many other attributes of the desired innovations.

Breaking the innovation process down into a number of phases and formulating the requirements for the condition of the organizational mechanism for successful realization of each of them leads to the conclusion that there is no single "optimal" condition of the organizational system for successful realization of all phases of even one innovation process.

The innovation process can be broken down into four conventional phases: the borrowing and generation of innovations; selection and formation; realization; fixation. Let us consider how the specific features of the phase are reflected in the requirements for the condition of the organizational system.

Phase One--"Borrowing and Generating Ideas" is realized best under the conditions of maximum mobility and freedom of the organizational mechanism. Great success is achieved by organizations that have a whole network of channels, methods and flexible forms of conducting dialogue with the surrounding world. It turns out to be quite useful to enlist on a temporary basis people who have ideas from other organizations and to create in the organization a climate of search which includes the possibility of free suggestion and discussion of any projects and ideas, regardless of how absurd they may seem at first glance.

Table--Structure of Innovation Potential of Organization

Elements of Organization Mechanism	Innovation Potential	
	Low	High
Organizational structure	Linear, linear-functional	Linear-functional with elements of target-program organizational formations, matrical structures
Technology	Specialized production equipment rigidly joined into a unified flow for mass output of products	Flexible automated production modules linked by a nonrail transportation system
Production or design premises	Specially designed for given production process--complete utilization of space	Of a universal type, the availability of reserve space and the possibility of changing the grouping of shops and departments
Organization of labor	Individual, operation by operation	Brigade, with high level of combination of operations and occupations
Wages	Individual, piece rate	Time-rate/bonus, brigade with utilization of coefficient of labor participation
Mobility of personnel	Minimal, mainly along the hierarchal ladder	Possibilities of horizontal and vertical shifts in keeping with tasks that are being performed
Style of management decisions	Authoritarian, minimum delegation of authority, rigid control over utilization	Delegation of authority, providing for high degree of enlistment of personnel in development of
System of informing personnel	Operational information about fulfilling planned assignments by the given subdivision	Detailed information about activity of organization as a whole, its life, problems and tasks
Psychological climate	Attitude toward solving current problems within the framework of their own work position	Attitude toward search for solutions, both immediate and long-range; both within the work position and beyond it.

I should like to especially emphasize the need to form a mechanism within the organization for borrowing ideas from outside it. The importance of this aspect is shown by the experience accumulated by large industrial corporations of the West. Thus according to the results of research conducted by an associate of Glasgow University (Graft Britain) of the 150 most important ideas that comprised the basis of 50 innovations in large companies, 142 originated outside the laboratories. It is precisely for this reason that large companies encourage participation of associates in various seminars and conferences, and offer them the opportunity to visit the organizations that produce their products and participate in plans that are not directly related to their basic activity. For this same reason the firms open up the doors to visitors, inviting them to express their ideas and suggestions concerning the condition and ways of improving the activity of the firm.

In terms of the scope and expenditures of activity for "collecting ideas" from outside of their companies or country, the indicated leaders are the Japanese corporations which enlist in this process almost all workers. It has become generally accepted for the corporations to make whole collective "tourist" trips. An indispensable part of these excursions are formalized procedures for sifting out and selecting ideas gathered on these trips.

The style of management most acceptable for this phase of the innovation process is the style of "delegation," which means a minimum amount of supervision of subordinates and granting them extensive rights to plan the selection of means and methods for organizing their work and participating in the development of ideas and innovations.

The described condition of the system almost inevitably comes into contradiction with tasks that are dictated by the second phase of the innovation process, namely the phase of "selection and formulation of innovations." The selection of innovations leaves a strategic aspect, needs the existence of fairly highly formalized procedures and the enlistment in this process at higher levels of the hierarchy of the organization's management.

The concretization and development of the innovation requires the innovation of fairly flexible and possibly temporary, but at the same time stable organizational formations. In this case the most acceptable is a style of management that contributes, on the one hand, to the manifestation of maximum initiative of the workers and simultaneously provides for efficient coordination and direction toward achieving the goal that has been set.

Fairly typical of this phase of the innovation process is a situation in which many valuable ideas and projects are sealed out and forgotten simply because their potential has not been properly revealed and presented, because in the organization there has been no individual or group prepared to fight for the innovation. That is, the idea has an "orphan's" chance of "surviving" and, in the final analysis, the introduction into practice is incomparably less than for ideas which have "parents." Taking into account the phenomenon that has been described, many Western corporations are creating conditions for "personalization" of innovations, offering the person who is enthusiastic

provide for a 0.5-percent increase in the severity of oil refining;

insure the execution of measures for raising the technical level of production and save 2.5 million rubles by reducing the prime production cost on output;

save 6,000 rubles by introducing inventions and innovators' suggestions;

obtain 500,000 rubles of above-plan profit;

reduce water consumption by 3.0 percent below the plan;

reduce discharges of harmful substances into the atmosphere by 5.0 percent more than called for by the plan;

provide for the output of 1.8 million rubles' worth of consumer goods;

operate at least 2 days on materials, fuel and power that have been saved during 1986 by saving the following amount of resources:

- 1,000 tons of crude (losses)
- 2,5 million kWh of electricity
- 75,000 gigacalories of heat energy
- 5,000 tons of standard-fuel equivalent
- 20 tons of bleaching clay
- 70 tons of barium hydroxide
- 30 tons of methanol
- 10 tons of caustic soda
- 6 tons of tetraethyl lead solution
- 30 tons of phenol
- 8 tons of benzosulfonic acid
- 2 tons of carbamide
- 30 tons of sulfuric acid

train or raise the qualifications of 2,400 workers;

give more than 4,350 people instruction in economic efficiency and training in schools of communist labor during the 1985/1986 education year;

provide for further implementation of the USSR Statute on Labor Collectives at Enterprises and Organizations with a view to finding reserves for improving work organization, raising labor and production discipline, and involving workers more widely in production management;

bring the share of the brigade form of organization and work incentives up to 65 percent and the share of those who work under brigade cost-accounting up to 30 percent of total blue-collar worker manning;

put 2,496 m² of housing space into operation;

expand patronage ties with kolkhozes and sovkhoses, and give them help in building agricultural, cultural and domestic-amenity facilities;

provide for the further development of subsidiary farms and put the contract for 50 head of cattle in Gyuzdek settlement into operation; and

fulfill unconditionally the plan for the launch of top-level directed work safety measures.

Azerbaijan SSR Ministry of Petroleum Refining and Petrochemical Industry workers assure the Azerbaijan Communist Party Central Committee and the Azerbaijan SSR Council of Ministers that they also will henceforth consolidate in every possible way and multiply the successes achieved and will exert maximum effort to be in the vanguard of the All-Union socialist competition.

The socialist commitments were discussed by the collective of Azerbaijan SSR Minneftekhim enterprises and organizations, and they were approved at a collegial meeting on 18 January 1986.

Azerbaijan SSR State Committee for Supplying Gas

Blue-collar workers, engineers, technicians and white-collar workers of Azerbaijan SSR Goskomgaz [State Committee for Supplying Gas] are conscientiously performing the party-directed task of increasing production of natural gas in every possible way, have joined actively in the nationwide socialist competition to fulfill the first-year plan of the 12th Five-Year Plan (1986-1990).

Azerbaijan SSR Goskomgaz enterprises sold during the 1st quarter of 1986 1.2 billion m³ of natural gas and 53,700 tons of liquefied gas, worth 1.2 billion rubles' worth of domestic services to the populace, and converted 38,300 apartments to the use of gas, 11,000 of them in the countryside.

One hundred ten cities, towns and urban-type settlements and 1,215 rural communities are now being supplied with natural or liquefied gas. Gas is being consumed as a fuel or raw material by 710 industrial enterprises, municipal, domestic-services and cultural institutions and 1,215 boilerrooms. The number of apartment units converted to use of natural gas in the republic is 1,215,900, including 485,000 in the countryside.

In 1985 the level of the housing inventory that had been converted to use of gas was 92.1 percent, including 97.1 percent of the urban and 80 percent of the rural housing inventories.

Having undertaken shock work in honor of the 27th CPSU Congress and the 70th anniversary of the Great October, the Goskomgaz collective is striving to celebrate the first year of the 12th Five-Year Plan with new work successes. After studying their possibilities, it adopted the following socialist commitments for 1986.

For the Basic Activity

Carry out the annual plan for the reception and sale of natural gas by 31 December 1986.

Carry out the plan for selling liquefied gas by 30 December 1986.

Cut gas losses during transport to 10 million cu ft per day by concentrating on the plan--by introducing new equipment, intensifying work on overhauling gas lines, quickly finding and eliminating the sources of gas leaks, and introducing gas-line operating practices.

Obtain an economic benefit of at least 150,000 rubles by carrying out trials for introducing new equipment and advanced experience and by introducing the novators' suggestions into production practice.

Raise the quality of servicing and the effectiveness of safety protection for underground gas lines in 1986.

Train 100 specialists in the more common trades. Raise the qualifications of skilled workers, including 100 high-skill workers, after instructions in the economic-efficiency education system to 3,000 workers.

For Industry

Carry out the 1986 plan for operation volume by 100,000 tons and 10,000 rubles' worth of additional output.

Produce 10 tons of liquefied gas in conventional production over above the plan.

Work systematically to raise output quality.

Save, through a universal and strict system for economy and conservation:

10 tons of boiler and engine fuel (100,000 kcal)
fuel equivalent;
10,000 kWh of electricity, and
1,500 gigawatt-hours of heat energy.

Increase labor productivity 9.1 percent (above 1985's results) and the efficient use of worktime.

For Construction

Carry out the annual plan for output by work on to November 1986 and do 10,000 rubles' worth of additional work.

Assimilate an additional 10,000 rubles' worth of capital investment of home-made jobs.

See to it that 93.3 percent of the republic's housing inventory is equipped for the use of gas by the end of 1986, including at least 93.3 percent for urban and 93.8 percent for rural housing.

Raise construction and installing work quality and insure that facilities turned over are rated "good" or "excellent."

Provide 35 cities and towns and enterprises and agencies with natural gas.

Strengthen the pace of work on converting rural communities to the use of gas.

Prepare the cities of Kakhi, Zakataly and Imishly and more than 20 rural communities for conversion to natural gas.

Complete construction of a feeder gas line to the city of Vartashen.

Convert 42,000 apartments to gas--36,000 of them in the countryside, 23,000 of them to be converted to natural gas.

Increase labor productivity growth by 1.0 percent above the plan.

Surpass by 0.5 percent the goal for reducing the prime cost of output.

Increase the number of brigades by 8, including 3 brigades that operate with the use of the KTU-5 and are based upon cost accounting.

Domestic Services

Extend an additional 30,000 rubles' worth of service to the populace, including 17,000 rubles' worth in the countryside, through above-plan sales of 300 tons of liquefied gas.

Replace 6,000 household gas appliances in 1986 with a view to improving municipal and household services for the population.

The socialist commitments were discussed in the collectives of enterprises and organizations and were adopted at an expanded meeting of the collegium of Azerbaijan SSR Goskomgaz.

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CSO: 1822/288

UDC 65.015.11:622.69(262.81)

METHODS FOR MOVING OIL FROM DEEP CASPIAN FIELDS STUDIED

Baku AZERBAJDZHANSKITE NEFTYANOYE KHOZYAYSTVO in Russian No 3, Mar 86 pp 38-42

[Article by F. A. Mamedov, A. D. Aliyev and A. Kh. Ayrapetov (GNIPIGipromorneftegaz [State Scientific-Research and Design Institute under the State Scientific-Research and Design Institute for Offshore Oil and Gas]): "Questions of the Design of Systems for Gathering and Transporting the Output of Offshore Oilfields in the Caspian's Deepwater Area"]

[Text] The high pace of oil recovery called for by the long-range plan for developing the industry will be provided for by the introduction into industrial development of offshore fields that are located in the deepwater area of the Caspian Sea.

The creation of systems for intrafield gathering of the output of fixed offshore cluster-well platforms (KFSU's) and for transporting it to the central offshore gathering points (GSPS's) is the main task when developing offshore fields. The complexity of designing such systems lies in the fact that not only are they located at a substantial distance from existing shore bases (70-100 km) but also that they are located in the deepwater area of the Caspian (100-250 meters).

An analysis performed by Gipromorneftegaz [State Scientific-Research and Design Institute for Offshore Oil and Gas] enables the conclusion to be drawn that the Baronyan-Vezirov gathering system is more suitable for oilfields in the Caspian's near-shore area that are less than 60 meters deep. Under this system, which is placed on trestle platforms, the output is gathered in single-pipe fashion (using formation pressure) up to the grouped metering installations (GZU's) and is transported farther along the common collector over the trestle up to the sectional oil-gathering points (UNSP's), where the oil is separated in two stages and, when necessary, first dewatered.

At first-stage separation, the gas is separated at a pressure of 0.4-0.5 MPa and is transported to the customer by the separation pressure, and the degassed crude is pumped to shore gathering points.

Because of the specifics of gathering the output of fields that are located in the deepwater area (the cluster method of drilling wells, the construction of large-diameter underwater intrafield pipelines, the high cost of hydraulic engineering structures at the field's facilities, and so on), the use of existing offshore systems has been limited.

$$\frac{\rho_g}{\rho_l} = \frac{\phi_n}{\phi_c} \quad (1)$$

where ϕ_n and ϕ_c are the gas content in the vertical sections and the descent sections of the oil and gas pipeline; and ρ_g is the density of the gas under transport conditions, kg/m³.

$$\frac{\rho_g}{\rho_l} = \frac{\phi_n}{\phi_c} \quad \text{and} \quad (2)$$

$$\frac{\rho_g}{\rho_l} = \frac{\phi_n}{\phi_c} \quad (3)$$

where β is the volumetric gas content of the two-phase flow.

In order to determine the coefficient of resistance λ_{cm} and the true gas content of the flow ϕ_n and ϕ_c , nomogram diagrams were used.

Calculations were made for each section for various conditions of the gas and liquid flow where the gas factor $\Gamma_1 = 100 \text{ m}^3/\text{m}^3$ (that is, during the natural-flow period of development), $\Gamma_2 = 200 \text{ m}^3/\text{m}^3$ (during the assist period, given single-pipe transport), and $\Gamma_3 = 7 \text{ m}^3/\text{m}^3$ (that is, after separation, where transport is separate).

The physical-chemistry characteristics of oil and gas of the field (well 25 Aprelya) are adopted as the initial data.

Figure 2 shows curves that describe the hydraulic losses in product pipelines Δp (for $D = 100 \text{ mm}$) as a function of the velocity of the gas and liquid mixture v_{cm} (productivity) at moments of intrafield gathering of the MKSP's output.

Analysis of Δp as a function of v_{cm} for all conditions of the gas and liquid flow leads to the following conclusions:

at low velocities of v_{cm} , Δp has larger values, which drop as v_{cm} increases. After a certain value (v_{cm} is optimal), increase of v_{cm} leads to increase of Δp . This is explained by the fact that where v_{cm} is low, Δp increases through gravitational losses at vertical sections of the pipeline, and as the velocity increases, losses through friction begin to predominate;

with increase in sea depth, hydraulic losses of head increase through increase of the pipeline's vertical sections; and

the lowest losses of head Δp in pipelines correspond to the optimal value of v_{cm} .

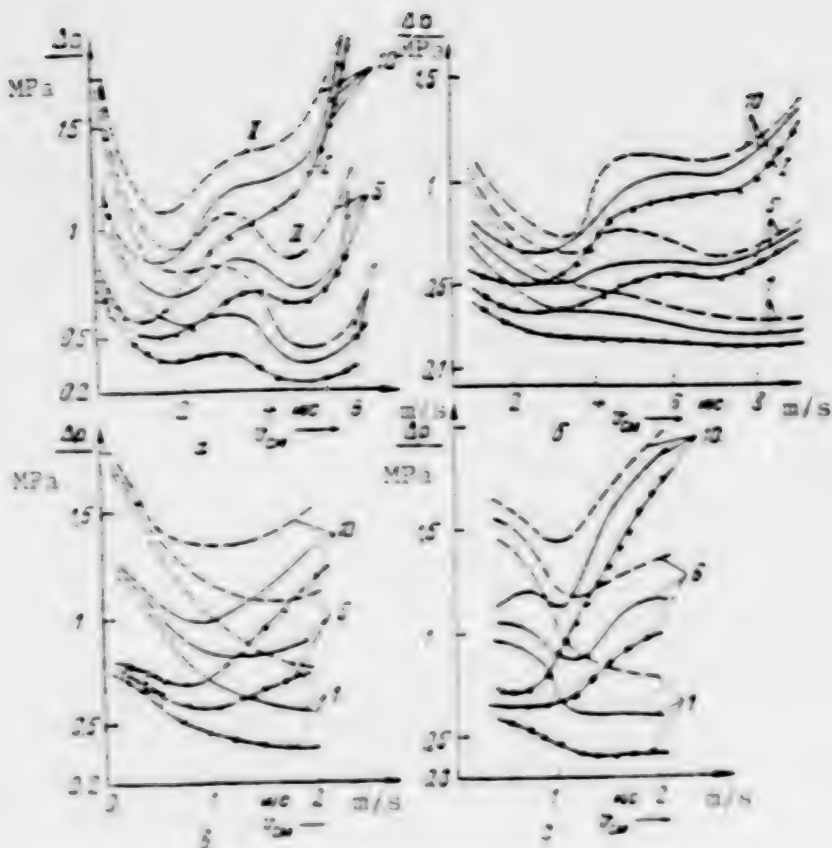
Figure 2.

a. δ and δ , respectively: $\Gamma_{\delta} = 120, 250$ and $7 \text{ m}^3/\text{m}^3$ for $D_y = 500 \text{ m}$.

b. $\Gamma_{\delta} = 7 \text{ m}^3/\text{m}^3$ for $D_y = 300 \text{ m}$.

I, II and III are, respectively, $H = 100, 165$ and 235 meters.

1, 5 and 10: Length of the output pipeline, km.



After optimization for v_{opt} and execution of the appropriate transformations [1], the effectiveness function in this case, taking (2)-(5) into account, acquires the form

$$\Delta p = \frac{1}{1 - \frac{1}{v_{\text{opt}}}} \left(\frac{1}{1 - \frac{1}{v_{\text{opt}}}} + \frac{1}{v_{\text{opt}}} \right) \quad (6)$$

where

$$\delta = h g (1 - \gamma) (1 - \beta) \gamma - h g \gamma - \alpha \beta \gamma \frac{L}{2D} \frac{2\gamma}{v_{\text{opt}}}$$

After evaluating the derivative $\frac{d(\Delta p)}{dv_{\text{opt}}}$ and equating it to zero, we get:

$$\frac{d(\Delta p)}{dv_{\text{opt}}} = - \frac{\delta + \gamma}{(1 - v_{\text{opt}})^2} + 2\gamma v_{\text{opt}} = 0 \quad (7)$$

from which

$$v_{\text{opt}}^2 (1 + v_{\text{opt}}^2) = \frac{\gamma + \delta}{2\gamma} \quad (8)$$

Let us examine the possibility of using systems for the intrafield gathering of the MEKP's output and for transport to the TEMPS, taking into account the siting of the platforms at various sea depths.

102

Variant 1. Gathering of the output from the MKSP's along a single-pipe system to the processing-unit platform (one of the MKSP's), first-stage separation, transport of the gas under separation pressure, and pumping of the liquid with gas dissolved in it.

Variant 2. First-stage separation at the MKSP's themselves and separate gathering of gas and of liquid with gas dissolved in it prior to arrival at the processing platforms; further transport of the gas under first-stage separation to the TsMPS, and the liquid goes to second-stage separation. The gas of second-stage separation is compressed up to first-stage separation pressure and is sent into the gas transport pipeline, and the liquid with gas dissolved in it is pumped to the TsMPS.

Variant 3. First-stage separation at the MKSP's themselves, transport of the gas under separation pressure, and pump-type transport of the liquid with gas dissolved in it to the TsMPS (through the transport operating-unit platform).

As the curves of Δp as a function of v_{opt} (see figure 1) indicate, the use of intrafield gathering over a single-pipe system (the first variant) is limited by a certain sea depth and pipeline length.

Thus, for the Field Imeni 28 Aprelya, at the processing unit No. 1 (a sea depth of 47 meters) the separation pressure $p_s = 1.5$ MPa (the transporting pressure) and the losses Δp during the transporting of output from the neighboring MKSP's (Nos 11, 5 and 10) are 0.2 to 0.4 MPa, which completely satisfy the requirements of the first variant, since the buffer pressure at the platforms themselves is 1.5 MPa. For the processing platforms that are at great depths (more than 100 meters), use of the single-pipe system will be impossible, since pressure losses will be greater than permissible, that is, the compressorfree transport system will be violated after first-stage separation.

Therefore, first-stage separation must be performed at the MKSP and the output (gas and liquid) must be gathered separately at the separation pressure at the processing platforms, that is, the second variant must be used.

As the curves of Δp as a function of v_{opt} indicate, transporting the liquid with gas dissolved in it from the MKSP to the industrial-unit platform also is limited to a definite sea depth and distance. For the Field Imeni 28 Aprelya, these restrictions are: for sea depth--250 meters at optimal velocities--0.8-1.5 meters/second (see figure 1b).

The second variant cannot be used at depths of more than 250 meters, since losses during transport of the liquid with the gas dissolved in it is more than 1.5 MPa, that is, more than the buffer pressure. In this case it is desirable to gather and transport the output under the third variant.

Conclusions

For fields that are situated in the Caspian's deepwater area, it is desirable that the output be gathered and transported intrafield under the radial

where, from the MKSP's to the processing gathering points (one of the MKSP's, which are connected with each other by a ring of oil and gas pipelines) and return to the TSPS at pressures of 4.0 MPa during the free-flowing period, and transport of the oil and gas mixture at 1.5 MPa is desirable during the gaslift period and the compressorfree transport of gas.

During the initial period of developing the field, the MKSP's' output is gathered and transported by the single-pipe system.

Upon conversion to the gaslift operating method:

a) at sea depths up to 100 meters, the MKSP output can be gathered before going to the processing platforms under the single-pipe system where the first-stage separation pressure $p_c = 1.0$ MPa; it is recommended that $v[1] = 4-7$ meters/second for $D_v = 300$ mm; and $r_{exB} = 0.1$ km;

b) at sea depths of less than 250 meters, it is desirable to gather the MKSP output under the two-pipe system to the processing platforms at a separation pressure $v[2] = 0.3-1.5$ meters/second for $D_v = 300$ mm; $r_{exB} = 0.1$ km; and first and second stage separations are at the processing MKP.

b) at a sea depth of 250 meters or more, the output of each platform after the first-stage separation is transported separately to the TSPS: the gas at the separation pressure, and liquid with gas dissolved in it is transported by pumps.

TOPIC: AIRBORNE-BASED DEPTH-CONTROL SYSTEMS 1986

1100

DOI: 10.1115/1.285

STUDY OF 'MOONLIGHTER' WORK STYLE DISCUSSED IN INTERVIEW

Moscow IZVESTIYA in Russian 15 Apr 86 p 3

[Interview with S. A. Karapetyan, candidate of economic sciences, head of the demographics department of the Scientific Research Institute on Economics and Planning of the Gosplan of the Armenian SSR by IZVESTIYA correspondent I. Kruglyanskaya: "How To Get To Know A Shabashnik": date and time not specified]

[Text] In the early spring days when in many areas of the country the end of snow has not come, in Siberia, in the north, on the kolkhozes in the Non-Chernozem zone, people extend from the republics of the Caucasus and the North Caucasus, inhabitants of the western regions of Belorussia and the Ukraine, "grachi" (rooks), "zhuravli" (cranes), seasonal workers, migratory workers--only don't call these people by the name better known to all of us, "shabashniki." There already is a vagueness in terminology when speaking about the uncertainty regarding this phenomenon. Would it be useful? Should it be developed or eradicated? The opinions are varied and at times mutually exclusive. Included in the study of this process are scientists, sociologists, economists. But up until recently this was only a so-called glance at the "shabashnik" at those places where he works. How does he regard home, or there where he lives and from where he moves to find work?

The Scientific Research Institute on Economics and Planning of the Gosplan of the Armenian SSR has been occupied with the study of this problem with this point of view. Our correspondent I. Kruglyanskaya speaks with S. A. Karapetyan about the first results of this work.

[Question] Suren Armenovich, very likely your institute now is the sole possessor of such rich materials on the "shabashnik" lifestyle.

[Answer] Excuse me, I don't like the word "shabashnik." We call them migratory workers. There is very little scientific material on this problem. I must confess that our materials will hardly provide a complete picture of this phenomenon. First we work only with migratory workers from Armenia. But even here we are unable to do everything that has to be done. We lack funds and time, and our resources won't allow us to travel to the regions of Siberia, the north and the Non-Chernozem Zone where 65 percent of the migratory workers from Armenia work. We selected the Rostov Oblast and the Stavropol Kray. We traveled all over in automobiles and buses... Travel by motor vehicle was absolutely necessary.

...sometimes have more confidence in my own intuitions than in answers based on formalization.

Question: Is anyone ever the victim of a scam? Were they sent to the migratory workers?

Answer: Yes, they were sent to dig for gold. But, generally they were sent to other work. They were sent to managers of construction and industrial enterprises of our republic and to managers in these regions of Armenia. They were a smaller portion of people for seasonal work, but as described. They were sent to various districts where migratory workers had had no previous experience of rural life and to local construction enterprises.

Question: Would anyone say that prior to the Russian Revolution there were different conditions with these phenomena?

Answer: Yes.

Question: What is negative?

Answer: Yes, it was negative. Very complicated. I, of course, know that among migratory workers you have specialists and craft operators who make their way in work. They have money, conclude contracts, manipulate money, seek out advantageous work and derive high profits from this. But still the main trend was towards finding the same thing that most likely there had been a migration type of these activities. But these activities were brought back by various industries as from the earliest times. In the rural regions of the Republic there spent a large number of people who used to be in the cities and in more developed regions there arose the need for work forces. And in our republic the percentage of people not engaged in economic pursuits is, on the whole, almost twice that throughout the country. According to data which we now have available, 35 percent of the migratory workers have not been involved in general production. 30 percent work temporarily and only 25 percent work continuously which may not satisfy them.

Question: Do you think that people leave because the republic cannot find jobs for them? But I think that for this purpose you have made considerable investments of various enterprises...

Answer: Yes, you basically found labor to need here, and 95 percent of the migratory workers from Armenia are men.

Question: In a sense, the work is primitive and non-productive. Therefore, not very ordinary operations, the simplest technology. Technology is on the lowest level and what results corresponds. Would you say that the average and healthy man is there if he knew that for a season he could earn from 4,000 to 8,000 rubles? This is not a very strong incentive for migratory workers.

[Question] But this incentive appears to be an argument against such a form of work. In both letters and conversations, time and time again the question is asked: Why does the "slabashnik" get 1,000 when working alongside someone earning 200?

[Answer] Before speaking we must compare what they do for 200 with what the other does for 1,000. And we made these comparisons. In many regions, "Armyanstroy," as we have named the migratory workers from our republic, do twice the volume of work of the construction subdivisions of Selstroy and Kolkhozstroy taken together. In 1984, for example, on the whole throughout the Rostov Oblast hired work crews, comprised of 12 percent of the number of workers from Kolkhozstroy, in six months completed 37 percent of the annual volume of its work. Whereas all work projects were done on time, at the association incomplete work reached 40 percent. In many instances local construction workers extended the period to complete the work by 2-3 times over the norm. Overexpenditure of the wage fund is tolerated. And so, after having made comparisons we concluded: By any measurement, the work efficiency of the migratory workers was significantly higher than that of local construction organizations. How does one explain this? Yes, everyone who saw the migratory workers operate knows why. Their crews, as a rule, work with only one day off a week, and they work as long as there is sunlight. Their professional qualifications are very high, especially among the stone masons, plasterers, asphalt workers, drivers and machine operators. But the most important things are discipline, the organization of labor and the principles of payment. The migratory worker has a direct, visible and clear relation between what has been completed and what has been earned.

[Question] But, nevertheless, how are they paid? Why are their wages even called non-labor profits?

[Answer] Do you first want to hear about the discovery I made for myself? After traveling along migratory worker routes I understood that to sit in an office and write "intensive labor" is one thing, but to actually see this labor, that's quite another matter. One can become very impressed with such labor and one can denounce (as they say, they bury themselves for the sake of money). Only it is impossible to call these wages non-labor profit for such work. One of the important conclusions from our studies is that the pay of the migratory workers is in no measure a result of an especially "kind" regard. The "secret" of large amounts of money is high-speed, intensive labor, and only this. We calculated that the sums wholly and completely accumulate in the strict framework of branch operational quotas, rates and standards. And how is payment made in practice? Let's take a typical work crew. Seven or eight people for a season construct six small houses. The estimated cost of each is 18,000 rubles. The wage fund is 24 percent. In addition, there's 40 percent of this amount if they finish on time and produce high quality work. They have 800-1,000 rubles a month for themselves. But if you calculate that their season is about six months, then the average monthly pay is about 500 rubles.

[Question] More than 10 years ago the USSR State Committee on Labor estimated that seasonal workers complete one year's standard work in six months. Everyone might want to fulfill the norm and then take a walk...

[Answer] Honestly speaking, I didn't observe any "strolling"...

[Question] What about between seasons?

[Answer] You understand that these are basically rural people, more than 70 percent. Or else they are inhabitants of small towns and villages. None of them earns money to throw away in restaurants. We have, for example, the Martuni Rayon, from where about 3,000 people leave annually. We attempted to track their monthly consumption of alcohol. There were neither highs nor lows. We didn't reach the conclusion that for six months they carouse. No, they build homes and purchase cars. If they are young they spend their money on the wedding and on acquisitions. If they're old, they help their children.

[Question] Is their prosperity distributed amongst the people of their villages?

[Answer] You see, in the mountainous regions from which basically they come seeking work, only the potato grows. If the peasant even sells a portion, he'll clear about 400 rubles. I can name villages which, 15 to 20 years ago, when there wasn't this mass migratory movement, had one foot in the grave. Now there are fine stone houses there.

[Question] Well fine, you say that while they're at home, these staid people build houses and marry off their children. But in the arguments put forth by opponents of this phenomenon one of the most important things is the corruption of the people in the areas of seasonal work.

[Answer] Yes, and I have read this. They say that they drink and live off the fat of the land on their own "easy money"... Well, I don't know how after a drinking bout one is able to work from sunup to sunset. This is pure fabrication. As far as "easy money" is concerned, local people do not see themselves in the hands of the "shabashniki." I've already said, they spend their money at home. While working, their per worker expenses amount to 80-100 rubles a month. As regards their moral make-up there were questions on this matter in our blank forms addressed to local authorities. And here's what we learned. According to data from the republic's State Committee on Labor, 25,000 people annually make the trip from Armenia. And for five years we counted less than 40 different cases of dramatic instances--divorces, people held for criminal acts, etc. Convert the percentages for yourself.

[Question] Nevertheless, the negative regard for migratory workers is quite strong...

[Answer] But among whom? Business executives basically have a positive attitude, while law enforcement organs have a negative one. And what is this attitude based on? We explained. First, it's in the "activities" of the smart guys, about which I've already spoken and which is a real calamity for the migratory workers themselves. Second, it's in the very fact that they earn money. Several, upon questioning, answered this way: A worker must receive no more than 250-300 rubles a month, and everyone who gets more does it by being sly. I won't give an evaluation of such statements. They've already been discussed repeatedly both in the press and at the very highest levels. I would still like to add that many people simply from a psychological standpoint do not accept migratory workers. That is to say, everyone can live off wages, but some need more than others. Here, by the way, the migratory workers themselves are partly to blame for having at times an unrestrained desire to earn as much as possible.

[Question] And what about from the position of those from whom they've departed? As a result, apparently, industry is stripped bare.

[Answer] I don't know how it is in other places, but our inquiries, conducted among managers of a number of industrial and construction enterprises in Armenia, indicated that they do not observe negative consequences for industry. The migratory movement at these enterprises turned out to be a rare occurrence (2-3 instances for 100 employed). But at those enterprises where average monthly wages exceed 200 rubles, there were no migratory workers. It was just the opposite... After all, the migratory workers are our hard core laborers. They are hardworking, physically strong and well-qualified people. It is from this our jealous regard for them stems: Why must their labor be embodied in matters not at home, but somewhere in other areas?

[Question] Indeed, why?

[Answer] I don't know, but in Armenia there are no "shabashniki." Now, though, you hear more and more about what might have to be done to develop work according to labor agreements.

[Question] What of it? It's a good thing anyway you look at it. It's for those places where the migratory workers labor.

[Answer] That's true, but meanwhile what takes place? On the one hand, everyone knows that migratory workers are needed at agricultural industry construction projects, and on the other hand managers more and more often prefer not to complete a program of construction if there are any gangs involved. This has caused a vague legal status for the migratory workers and an unpredictability of motives for which both the migratory workers and their employers might be held responsible.

[Question] Right now many people are saying that this process must be regulated.

[Answer] I'm familiar with several proposals. Many begin with the introductory statement: they say that migratory workers, of course, are shady people. But, since we can't get along without them, let them work. But then they say: this cannot be tolerated, it should be stopped, and another says it should be forbidden. At the same time, they arbitrarily string together the facts of these violations, the percentage of which I've already said was meager. This completely conceals the results of the work done by the migratory workers. At the same time the estimated cost of construction work completed by only migratory workers from Armenia in a season, according to our figures, amounts to 400-500 million rubles! Just think about that.

[Question] And do you have some reasons for these calculations?

[Answer] The idea to convert the seasonal migratory work into some form of organized recruitment of the work force seems reasonable to me. Now we all know that those involved in the organized recruitment of labor carry out their functions poorly. Armenia itself must annually supply more than 1,000 people. We fulfill from 30-40 percent of the plan. And then after 2-3 months many return home? Why? Because at some work project they provide them with communal housing, pay them 120-150 rubles and there's no opportunity to do anything. At the same time the State Committee on Labor itself can gather statements throughout the country on where and what kind of work has to be done. And Armenia in answering would respond: There are so many work crews ready to do this and that this year. It is evident that here the status of the migratory worker as a member of a temporary labor collective must be clearly defined. But the strong points of this collective, or as they are usually called, work crews, must be preserved.

In conclusion, I'll state that the negative regard for this activity comes often from an elementary lack of knowledge about it. And, excuse me, the newspapers are the culprits for the unfavorable reputation of the migratory workers, seizing and supporting opinions based not on what are typical, but are the exceptional instances. Of course, all types of crimes must be stopped. The migratory workers themselves benefit by this. But, when passing out a verdict at odds with this phenomenon, the phenomenon itself must be evaluated clearly and judiciously. We must find and skillfully apply those regulators which might allow us to use this elementary process as much as possible for the good of the national economy.

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CSO: 1828/104

NEW DECREE ON WORK REGULATIONS FOR 'MOONLIGHTERS'

Moscow SOBRANIYE POSTANOVLENIY PRAVITELSTVA SOYUZA SOVETSKIKH SOTSIALISTICHESKIKH RESPUBLIK (OTDEL PERVIY) No 23, 1986 pp 399-402

[Decree No 576 enacted in the Kremlin, Moscow, 15 May 1986, signed by N. Ryzhkov, chairman of the USSR Council of Ministers, and M. Smirnyukov, administrator of affairs of the USSR Council of Ministers: "On Putting Order Into the Organization and Remuneration of Temporary Construction Brigades"]

[Text] The USSR Council of Ministers takes note that in a number of regions of the country, mainly in rural localities, it has become widespread practice to recruit temporary brigades for construction and repair of production facilities and housing and to do other construction and repair work. If their activity is properly organized, these brigades make a definite contribution to construction of the economy and to construction of housing and cultural and consumer service facilities.

At the same time there are serious shortcomings in the use of temporary construction brigades. Kolkhozes, sovkhoses, and other enterprises, organizations, and institutions frequently do not conclude the proper contracts with the workers of those brigades when they are hired for the work, or these contracts are drawn up with violation of established procedure. There are cases when unit prices or the amount of work done are hiked up, when materials, construction equipment, or other equipment are used unlawfully, and this results in unjustified overexpenditure of money and creates conditions for abuses.

In order to put order into the organization and remuneration of workers of temporary construction brigades the USSR Council of Ministers decrees as follows:

1. It is hereby set forth that temporary brigades may be recruited for construction and repair of production facilities and housing and for performance of other construction and repair work only on the basis of written work contracts concluded by kolkhozes, sovkhoses, and other enterprises, organizations, and institutions with those temporary construction brigades.

Kolkhozes, sovkhoses, and other enterprises, organizations, and institutions may conclude contracts with temporary construction brigades only if every member of the brigade has a certificate from his permanent place of employment

(or study) on his having been granted leave or a document confirming consent of the kolkhoz board to his leaving to work on other farms (in other enterprises), and in the case of a person taking employment for the first time--a document as to his immediately previous activity issued by the housing and municipal service authority or by the executive committee of the local soviet of people's deputies, and in the case of those who have been temporarily unemployed--a document issued by the executive committee of the local soviet of people's deputies, and in the case of retired persons--the pension certificate.

The USSR State Committee for Labor and Social Problems shall jointly with the AUCCTU adopt a regulation on the procedure for performing work with temporary construction brigades and the form of the relevant standard contract.

2. Executive committees of rayon, city, and city rayon soviets of people's deputies shall be required to register contracts submitted by kolkhozes, sovkhozes, and other enterprises, organizations, and institutions which they have concluded with temporary construction brigades.

Checking the correctness of the drafting of contracts which kolkhozes, sovkhozes, and other enterprises, organizations, and institutions conclude with temporary construction brigades and also verification of the necessity for performing the work indicated in the contract, the conditions of remuneration, the accounts for payment of wages, calculation of work done and wages for construction shall be the responsibility of the body superior in the hierarchy to enterprises, organizations, and institutions, and in the case of kolkhozes shall be the responsibility of rayon agroindustrial associations.

3. Materials, tools, construction and other equipment and vehicles shall be directly furnished to temporary construction brigades by the kolkhozes, sovkhozes, and other enterprises, organizations, and institutions which have concluded contracts with those brigades.

The issuance of funds to temporary construction brigades to pay for the services of outside enterprises and organizations, to buy materials, or to rent machines, machinery, and equipment, the awarding of supply and sales functions to those brigades, the performance of work using materials belonging to the brigades, and also the recruitment of other persons shall be prohibited.

4. Temporary construction brigades shall be remunerated according to the end result of the work they have done in accordance with the contract concluded, as a rule on the basis of the application of the payment-by-the-job system of remuneration for the entire amount of work items on the basis of the allowances and unit prices in effect in construction and construction-repair work.

Bonuses for performance of work items stipulated in the contract shall be computed in accordance with the regulation on the payment-by-the-job system of remuneration in construction, approved by USSR Gosstroy, the USSR State Committee for Labor and Social Problems, and the AUCCTU.

Contracts with temporary construction brigades shall as a rule be concluded for construction of projects on a "turnkey" basis. The workers of these

brigades must be awarded bonuses for conservation of materials and for achieving other high indicators in their work, to be paid from the material incentive fund.

5. Executive committees of local soviets of people's deputies shall provide effective oversight over enforcement of this procedure for remuneration of the workers of temporary construction brigades, and institutions of USSR Gosbank and USSR Stroybank shall do likewise for expenditure of the fund for remuneration for these purposes.

6. Sovkhozes and other state agricultural enterprises shall be allowed to make payment in kind (with agricultural products) for work done by workers of temporary construction brigades, with their consent, out of the funds allocated for remuneration in kind and from output achieved over and above the assigned plans and norms.

Rayon agricultural associations shall on the basis of the proportions of remuneration in kind established for the workers of sovkhozes and other state agricultural enterprises set the maximum proportions of farm products to be issued to workers of temporary construction brigades by way of remuneration of their work by payment in kind. These products shall be issued within the limits of the total wage for the work done envisaged by the contract on the basis of purchase prices.

It is recommended that kolkhozes make payment in kind to workers of temporary construction brigades for work they have done in accordance with the present decree.

7. The USSR Ministry of Internal Affairs shall provide strict surveillance over observance of the established regulations for registration of persons who are part of temporary construction brigades.

8. Councils of ministers of union and autonomous republics and executive committees of kray, oblast, rayon, city, and city rayon soviets of people's deputies shall oversee the activity of temporary construction brigades, shall analyze the reasons why individuals travel to do seasonal work outside their oblast, kray, or republic, and draft and take additional steps to improve the use of labor resources.

9. USSR Gosplan, the USSR Ministry of Finance, the USSR State Committee for Labor and Social Problems, and the USSR State Central Statistical Administration shall within 1 month define the procedure for planning and recording the wage fund and number of workers of enterprises, organizations, and institutions recruiting temporary construction brigades to perform construction and repair work, careful not to include in the allowance for the number of workers the members of these brigades in cases when performance of such work is not the principal activity of the enterprise, organization, or institution.

7045

CSO: 1828/136

EDUCATION

HIGHER EDUCATION OFFICIAL ON VUZ ENTRY EXAM RESULTS

Moscow IZVESTIYA in Russian 4 Aug 86 p 3

[Interview F. Peregodov, USSR first deputy minister of higher and specialized secondary education, conducted by E. Maksimova and I. Prelovskaya: "Professors and Higher-School Applicants"; date and place of interview not given]

[Text] Admission to higher schools is an event not just for those who are entering but also for members of their families, in other words, for millions of people. It is understandable that readers would be interested in the innovations that distinguish this year's admissions to higher schools. Therefore, we decided to check into how they will work out in practice. Exams are just beginning in the country's higher schools, but in Moscow and Leningrad they have already been completed. Just what do they show? Recently an exchange of views was held in the USSR Ministry of Higher and Specialized Secondary Education among employees of Moscow higher schools who serve on vocational-guidance commissions and a large number of division deans and department heads. They represented various institutions: the Moscow Higher Technical School imeni Bauman, a medical institute (Moscow Medical Institute No. 1), an aviation institute (Moscow Aviation Institute), the Pedagogical Institute imeni Lenin, a textile institute, and automotive engineering institute, the Moscow Institute of Radio Engineering, Electronics and Automation, a construction engineering institute, a veterinary academy, etc.

Let us note from the outset that in principle everyone approved the organization of interviews with applicants. The only discussion was over what should be clarified, rectified and improved. Understandably, the initial experience with the work of vocational-guidance commissions, like the new regulations governing admissions to higher schools, needs to be interpreted, and more profound conclusions can be drawn after the newly accepted first-year students have passed through the crucible of winter and spring exam sessions. Nonetheless, immediate impressions mean a great deal: later on they become less vivid. And the optimism of those who got together, let us say for the sake of fairness, pertained mainly to the future and to prospects for developing the tendencies incorporated in the new regulations for the admission of students.

In analyzing the interviews that have been held, the representatives of higher schools said that for the first time they have acquired a tool that permits

them to familiarize themselves with the applicant's personality. Can this tool be trusted? Keeping in mind the impressive makeup of the vocational-guidance commissions, which include deans, division heads and professors, we can compare these commissions to councils of experts. And the method of expert evaluation is probably less subjective than an exam, which with good reason has been compared to a lottery. The dean of the Moscow State Pedagogical Institute drew an interesting comparison between the results of the interviews and those of examinations. Out of the 193 applicants who received "twos," 173 also received zero points in their interviews. And of the 18 applicants who received a "five" for their composition, only one received a "zero" in his interview.

The CISU Central Committee's draft on the restructuring of the higher school proposes the improvement of the regulations for higher-school admissions, in order that young people who are endowed with ability, industrious and prepared for this step in education may be selected for admission to them. Areas for the improvement of admissions were also discussed. This was the subject of the questions we asked First Deputy Minister I. P. Kuznetsov.

[Question] Feliks Ivanovich, all the same one gets the impression, on the one hand, that the old regulations on vocational-guidance interviews developed in the ministry "overregulated," as people here like to say, the point scores and thereby placed the utmost limits on the higher school's independence in encouraging the sort of applicant it needs; and, on the other hand, that many higher schools played it safe and, in working out their own regulations on the basis of the standard regulations, did not even take advantage of the widest opportunities that they were given. What do you think about this matter?

[Answer] Admission to the first year is an extremely important matter for every higher school. Therefore, in drawing up standard regulations for the vocational-guidance interviews--and, as you know, this is the first time they have been worked out on a state scale--we tried to provide the higher schools with as precise guidance as possible as to how many additional points can be given for which advantageous qualities that would be valuable for a future student. In this case it's important to make absolutely sure of what you're doing beforehand. After all, if there is a great deal of competition for admissions, one incentive point could affect whether an applicant would be admitted. Therefore, this year's interviews have been a kind of projection of our possibilities along this path. I think that cautiousness hasn't hurt for the first time around. After all, not all applicants have managed to get their bearings in the new circumstances.

But you obviously have noted that the institutes that have been providing vocational guidance for schoolchildren and young workers for a long time and in a systematic fashion acted more boldly than others. Both the Moscow Aviation Institute and the Moscow Institute of Aviation Technology are examples in this regard. Although the aviation institute does not have such a large number of applicants, it has learned to recruit good students. In the interview of its applicants an effort was made to give additional points to the applicants who interested the commission. IZVESTIYA has already written

About the olympiads conducted at the Moscow Aviation Institute in the course of its interviews in order to give added points, on legitimate grounds, to those capable of earning them. There you have an intelligent initiative on the part of the higher school itself--a measure that no one proposed to it "from above."

We would like in the future to enhance the role of the higher schools' vocational guidance work among young people. We believe that it is necessary for them to purposefully seek out and prepare future students for themselves by utilizing various forms of work: thinking up a system of higher-school olympiads, attracting youngsters to youth schools connected with the higher schools, and opening up correspondence schools of the type that Moscow State University and Piskunov (spelling unknown) have.

The additional points that we will give for lengthy forms of vocational training (youth schools, special schools and classes, long-term preparatory courses connected with the higher schools), for victories in major olympiads, for successes in technical creativity, etc.--all this, it seems to us, should prompt young people to take a more serious and independent attitude toward their studies, raise interest in invention, modeling, creative work and the solution of nonstandard problems, and encourage youngsters to develop their interests and abilities. We think that the prestige of public forms of preparing for their future task is rising in the eyes of youngsters, while the value of private tutoring is diminishing.

In developing various forms of work with schoolchildren, the higher schools will be able to compensate partly for shortcomings in the preparation in schools and rural vocational-technical schools of youngsters who want to obtain a higher education. We shall not close our eyes to this, either.

As for the wariness of some higher schools with respect to this year's interview, it must be admitted that some of them have preferred to play it conservatively safe and not give additional points to applicants for reasons for which they could have given them. The pedagogical institute made wide use of the point for so-called "other vocationally valuable qualities" for which provision is made in the standard regulations and, as we see, is satisfied with the results. But the medical institute declined to take a risk. Yet that's the simplest way of all--to stick to the tried and true ways and not take a step forward without instructions from above.

[Question] But wouldn't it be a good idea to give a higher school and its vocational-guidance commission the right to be bolder in assigning incentive points to an applicant who might not have documents confirming his interest in a vocation but manifests it in a way that is obvious to the professors or, as a representative of the medical institute put it in the discussion, "shines"? Take, for example, the following situation: At the automotive engineering institute people regretfully gave additional points to an auto mechanic who, they sensed, had extremely weak preparation for higher school, but they could not give any additional points to a radio installer, a sharp and inventive young man who had brought his own very interesting model cars but, alas, was applying to a higher school unrelated to his vocational specialty. Nonetheless, shouldn't more reliance be placed on the feelings of a commission

made up of major specialists? Let's not be lulled to fall into a purely "first impression," the impression which an applicant takes on each judge.

[Answer] We intend to give higher schools in the future greater freedom of action in developing their own regulations on the admission of students. This year only the first step has been taken.

[Question] Views also clashed on the question of when it is best to hold the interviews--before or after the exams. At the Moscow Higher Technical School in one division 10 of 60 applicants who had interviews received "five's" on their exams. The arithmetic is simple: the fewer students there are, the more detailed and thorough the discussion with each of them can be. From every indication, the technical schools would prefer to test and interview applicants after the exams, whereas the pedagogical institute prefers the present procedure. In the view of its people, both the range of applicants covered and feedback from the school are important here. They want to get a better picture of the spectrum of potential students and "watch" those who, in the event they fail the exams, they should "take note" of. The school is prepared to help such applicants prepare for next year's exams.

[Answer] Obviously the arguments of the proponents of both views should be weighed. And maybe after a thorough analysis of the admissions system at all of the country's higher schools we shall reach the conclusion that the higher schools themselves should resolve this question in accordance with their interests and capabilities.

[Question] A discrepancy arose. Medal winners were not given additional points in the interviews for their medals, but the top students (awarded vocational-technical schools did receive that treat. Not if no medal was medal winners succeed in passing their first exam with a "five," and enter that they take part in the competition on the same terms as everyone else.

[Answer] It's true that a medal is evidence of persistent and serious work on the part of a student in school and deserves to be rewarded, even if the student has not managed to fully confirm its worth in the exam.

[Question] Many people believe that it would make sense to make the scale of incentive points in the interviews more selective and subtle--in other words, to base it not on whole-point units but on half points. People are bothered by the unequal content of points. What do you think?

[Answer] I believe that this question must be studied more carefully. I shall only note that whereas the commissions were confident in awarding points for a person's social experience--service in the army, work in production, in short, the mandatory points--the attempts to size up the applicant were extremely modest. I shall cite some figures.

About 22,000 applicants took part in vocational-guidance interviews at 11 Moscow higher schools. To nearly half of them (47.2 percent) the commissions did not give a single additional point. And about one-third of the applicants received one point. As you see, the commissions were not generous. It may be that it would be easier to award an applicant a half point.

[Question] According to regulations, the commission's chief duty is to provide recommendations regarding a higher school's selection. This seems that it may support an applicant's desire to go to a given institute, but it may say "no." But only a little over two percent of the applicants received the departing words "not recommended."

Isn't this because this notation doesn't carry any consequences? An applicant may easily score a passing grade on the exams and become a student. Should a recommendation be given at all? Wouldn't it be more proper simply to assign or not assign points?

[Answer] Of course, the fact alone that a representative commission sends young people into the exams with its "filial piety" and political sense. It puts them in a better frame of mind going into the exams.

On the other hand, the lack of negative derivation reduces the value of a positive recommendation. We shall discuss this point. However, the possibility of applying it in practice does exist--that is, the possibility of giving preference to those who have been recommended over applicants who have scored an equal number of points as a result of the exams. However, this possibility exists mainly for the higher schools to which admissions are more highly competitive, where fairly impressive competition exists even after the exams.

[Question] As we have seen, not all of the documents that applicants present--certificates, diplomas, attestations--turn out to be of true validity. What can be done about this?

[Answer] Let me take the opportunity to call the attention of everyone who issues such documents for a higher school to this serious circumstance. I believe that when it discovers a discrepancy between a person and a document an institute is obliged to issue a special finding, as it were, to ascertain in the strictest fashion, through higher organizations, those who issue documents that cannot be trusted.

In summing up our conversation, I would like to emphasize the main thing--the interviews help, and let's hope that this will be more noticeable in the future, to deepen the higher schools' ties with production and with the schools. The country's higher schools must admit the part of students who will successfully participate in accomplishing the lofty tasks that the party sets for the country.

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cultural, educational and sport facilities. It is not confined to a narrow circle of specially gifted people, but the broad masses.

A drastic improvement of the quality of the work in the cultural sphere and of sport centers will promote a more rational and effective use of free time by workers. Such is the classic of Marxism-Leninism, as it is well-known, considered a necessary field for the all-around development of personality. Thus, we are setting about the creation of such a social task as the assurance of a new quality of life for the people. In order to do this, it is necessary to implement a broad program for the construction of cultural and sport complexes, holiday homes, sanatoriums and dispensaries, and this should become the concern not only of the appropriate ministries and departments, but also of the labor collective themselves. New conditions of management, which are finding their rights, are directing the collection towards the efficient utilization of the earned capital of each collective construction, experience in solving such problems has been accumulated by the Mikhail Bulgakovsk Blessed Yarn Label Company, the Moscow Garmentmaker Production Association, in the Novosibirsk Textile Industrial Combine, and in other col-ectives. This experience, which has been approved by the USSR Central Committee, will be made available in every way possible, and it will be given a truly public scope.

The new quality of life is a matter of first importance in the basic sphere of man's activity. It is a matter of first importance given in the CPSU Program in determining the content, content and collective nature of labor, and in a substantial reduction, and in the long run, in the elimination of unskilled and hard physical and unskilled labor. Thus, the share of unskilled labor, which about half of workers in certain groups of col-ectives are engaged in, should be reduced to less than twenty per cent by the year 2000 (this share has practically not decreased for a long time). More than 20 million persons will be liberated from unskilled labor. The efforts of trade unions must now be directed to an improvement of labor conditions in order to bring work places for the most part in line with the requirements of industrial sanitation and hygiene within the shortest period of time, and to be rid of hard work for all women in the 13th Five-Year Plan.

But concern about the new quality of life will not lead to a reduction of hard physical and unskilled labor. The development of a person's abilities, a general policy of the education and qualification of workers, the sanitation of the production of more and more complicated equipment, and the growing intellectualization of labor lead to the active

operation of the law of the change of labor. There is an increasing tendency to replace the individual worker, the simple bearer of a given fractional social function, with a well-rounded individual for whom the various social functions are interchangeable forms of life's activities (K. Marx and F. Engels. Sochineniya. [Complete Works], Vol 23, p 499).

At the same time, an account must be given of the fact that this process will require ~~long periods~~ of time, just like the solution of the task of rubbing out substantial differences between physical and mental labor. That is why it is hardly possible to evaluate positively the sometimes inadequately thought out equalization of the incomes of workers engaged in various types of labor.

An improvement of the managerial mechanism and a fuller implementation of the principle of social justice undoubtedly will lead to significant changes in regard to income levels both of individual workers and of categories of laborers. It is proposed that the overcoming or even a decrease of differentiation here is the task not of today and tomorrow, but of the more distant future. Thus, the provision of a new quality of life within the foreseeable future, if one takes the sphere of distribution, is connected not with the equalization of the wage levels of labor, but with the total elimination of wage levelling, and with the subsequent realization of the principle of paying for labor in accordance with its quantity and quality.

We are hardly indifferent to the ways in which the incomes and well-being of people grow. And this means that it is necessary to eradicate more decisively deviations from the socialist principles of allocation, and most of all unearned incomes. Specific measures for intensifying the struggle with them have been provided for in the decrees of the CPSU Central Committee, USSR Council of Ministers and also of the Presidium of the USSR Supreme Soviet. At the same time, as it was noted at the June Plenum of the CPSU Central Committee, the practical implementation of them must be conducted so that, in eradicating this phenomenon that is alien to socialism, they serve the improvement of the workers' life. The forming of reasonable demands and the cultivation of a consumer culture must not be forgotten. Indeed, many negative phenomena are exactly explained by the ~~deficiency~~ of this culture.

The most important feature of the new quality of life is a broad scope for creative work for the laboring man and for the discovery of a person's abilities. They are realized in the most different spheres, for example, in artistic creative work, in the upbringing of children in the family, etc. And

to an evergrowing degree in the participation of workers in solving state and social problems, in other words, in the implementation of the socialist self-government of the people. Thus a new psychological order of man is created--not of an object, but of a subject of control, and not of an executor, but of a master of production, and of the city and country. It is possible to cultivate such a relationship, of course, only in the course of the practical realization of the rights of a citizen and of a labor collective as a whole. Therefore, a literal recognition of rights and references to appropriate statutes is not so important, but rather the actual application of constitutional standards, the rules of the law on Labor Collectives and of other Soviet laws, and the forming of a high political standard in each person.

Practice has shown that serious work in this direction brings tangible results in the battle with drunkenness, official abuses, misappropriations of public property, etc. But this is only the beginning. The task is to bring this battle to an end, and at the same time to steadily introduce into practice everything that is best and progressive that is being born in the way of life of Soviet people--be it collective forms of the organization and paying of labor, the conducting of leisure time, new rituals, etc. The main thing is to deepen collective and mutual assistance between people--the most important features characterizing socialist social relations and the new quality of life.

Providing Soviet people with a new quality of life is a task which concerns various aspects of our everyday existence. And the solution of it will make it possible to reveal more fully the basic advantages and genuinely humanist essence of the socialist order, and to strengthen its effect on social progress.

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EDUCATION

EDUCATION DEPUTY MINISTER CENSURES EVENING SCHOOL PROGRAM

Moscow UCHITELSKAYA GAZETA in Russian 9 Sep 86 pp 1-2

[Article by V. D. Shadrikov, USSR deputy minister of education: "Evening School: Problems and Solutions"]

[Excerpts] On 14 August a board meeting of the USSR Ministry of Education was held. At that meeting, the current status of our country's evening schools was subjected to a critical analysis.

Evening shift schools and correspondence schools are one of the means by which working young people can acquire general secondary education. Special curricula and programs for them have been developed and approved. These curricula and programs provide for two types of studies: full-time and correspondence, as well as a sessional system of correspondence studies which takes into account students' seasonal production employment. Evening school programs are variations of daytime school programs. More than 60 different types of textbooks, teaching materials and correspondence school workbooks have been published for evening schools.

Over the past eight years the number of working young people aged 16 to 29 who have not received secondary education or who are not currently studying decreased by a factor of four. However, educational organs have failed to react at the proper time to changing conditions, and have continued to expand the network of evening and correspondence schools and increase the number of students enrolled; this has led to flagrant violations of standardizing acts and to abuses.

The shortcomings in the organization of evening and correspondence studies for working young people have been sharply criticized in the press on more than one occasion. For instance, in November 1985 KOMSOMOLSKAYA PRAVDA published an article by teacher Yu. A. Batutin entitled "Fed Up", which criticized the functioning of evening schools and the way in which they select students for admission. Subsequently, in December, responses by teachers to this article were published under the same title. In March 1986 the newspaper SOVETSKAYA ROSSIYA published articles revealing instances of numerous violations in the operations of evening schools under the title "Under the Evening Fig Leaf." In May 1986, under the rubric "Comments from the RSFSR People's Control

Committee," it printed an article on the results of checks conducted in various aspects of evening school operations. Articles about the poor state of affairs at evening schools have been published in UCHITELSKAYA GAZETA. A number of critical articles have also appeared in other organs of the press.

Inspections conducted by the prosecutor's offices of the USSR and the republics, the USSR Ministry of Education, the USSR Ministry of Finances, union republic ministries of education and people's control committees in a number of republics indicate an extremely unsatisfactory situation and flagrant distortions in the way in which general educational training for working youth is organized. There have occurred numerous instances of flagrant violation of current legislation and standardizing documents by the USSR Ministry of Education in both the process of selecting students for admission to evening schools and in the educational process.

The directors of many evening and correspondence general educational schools have stooped to deception in their desire to fulfill their admissions quota at any cost. Individuals have often been enrolled in classes without presenting the required documents and applications; non-working young people and fictitious individuals have also been enrolled.

Until recently there existed the practice of stringent and excessive planning of the evening school student body. Locally efforts were made to fulfill plans for filling evening and correspondence schools at any cost; everyone who did not have secondary education was enrolled, with no consideration given to whether young people were either able or willing to study during a given period. Sector ministries and departments sought to avoid the necessity of solving pressing problems pertaining to the evening and correspondence education of working young people.

Serious errors in the student selection process, sloppy organization of curriculum and weak supervision on the part of enterprises, farms and labor collectives -- and in some places a complete lack thereof -- have resulted in unsatisfactory class attendance, which in turn has had a negative effect on the quality of the academic process. At many schools the correspondence form of study has been expanded without justification and class schedules changed, making classroom attendance mandatory only one day per week. It is no wonder that at many schools courses are superficial and lacking in substance, or that the majority of students are not prepared to do independent academic work. Attempting to maintain a high number on class and group rolls and keep students in school at any cost, teachers have demonstrated impermissible liberalism in the evaluation of students' knowledge and abilities. All this has led to the well-known discrediting of the evening and correspondence school system and has had a negative effect on the training of pedagogical cadres and students.

The USSR Academy of Pedagogical Sciences and the Research Institute for Adult General Education have not devoted sufficient attention to the elaboration of well-founded proposals concerning the further development of evening schools, improvement of the content of adult education programs and development of more

appropriate forms and systems by which working young people can receive secondary education in accordance with the requirements of the Basic Directions for Reform of General Educational and Vocational Schools.

Despite the fact that the negative situation in the evening and correspondence school system and the violations permitted in this area were known to local educational organs, the latter failed to take at the proper time the measures necessary to overcome these negative phenomena. The staff of educational organs and schools directors lowered their standards for teachers. Only after a directive from the USSR Ministry of Education on 14 March 1985 entitled "Concerning Elimination of Serious Shortcomings in the Operation of Evening and Correspondence Schools" did republic ministries of education and kray and oblast departments of education check up on the functioning of schools for working young people and take a number of steps designed to eliminate the shortcomings thus discovered.

According to data from union republic ministries of education, subsequent to these checks on the correctness of student admission and actual attendance by students at evening and correspondence schools, a total of 2,700 schools and academic consultation offices have been closed since November 1985. On account of unsatisfactory organization of general educational training for working young people, falsification of the number of students enrolled, violations of budget and fiscal discipline and the presentation of biased information concerning the operations of evening and correspondence schools, many school director and heads of academic consultation offices have been relieved of their positions, administrative penalties have been levied on a considerable number of educational system employees, and criminal charges have been lodged against some of them.

In a directive dating from 6 June 1986 entitled "Concerning Urgent Measures to Eliminate Serious Shortcomings in the Organizations of Evening and Correspondence Studies for Working Young People," union republic ministries of education were given the additional proposal that they reorganize the network of evening and correspondence schools and take up the question of whether it is advisable to continue to have correspondence secondary general educational schools at the oblast, kray and republic levels (except for special evening schools for persons who are deaf, hard of hearing, blind or suffering from poor eyesight). It has been determined that the opening of schools, individual courses and academic consultation offices, as well as the establishment of wage scales for teachers and school administrators, should be conducted only after careful verification by departments of education of the actual number of students enrolled in evening school. For academic consultation offices which are based on daytime general educational schools there is planned a system providing for a unified administrative system and pedagogical collective with those schools.

In July 1986 the board of the USSR Ministry of Education discussed the draft for a statute concerning secondary general education for working young people; this draft was drawn up in accordance with the Basic Directions for Reform of General Educational and Vocational Schools, as well as standardizing documents from the USSR Ministry of Education on issues pertaining to the operations of schools for working young people and to the changes which have been made in

the operation of evening schools. This draft statute has been sent to the union republic ministries of education for discussion.

On the basis of materials from the USSR Prosecutor's Office, on 14 August 1986 the board of the USSR Ministry of Education considered the question of what measures should be taken to eliminate flagrant violations in the operations of evening and correspondence general educational schools for working young people. The USSR Ministry of Education published a decree noting that the system for the instruction of students at evening and correspondence general educational schools is functioning extremely unsatisfactorily. Ministries of education in union and autonomous republics and local educational organs were assigned the task of analyzing within a two-month period the situation existing at evening shift secondary general educational schools and ensuring that shortcomings are eliminated, and of discussing measures to bring order to the operation of these schools and improve the quality of the educational process. This discussion should be conducted at teachers' conferences and meetings of boards of education and within pedagogical collectives. It was proposed that they: continue reorganization of the network of evening and correspondence schools, proceeding upon a realistic number of working young people wishing to continue their education in such schools; conduct checks on the functioning of all evening and correspondence schools during the 1986-87 academic year and take steps to improve their physical academic base and create the proper conditions for young people's studies. The particular attention of control and auditing departments was directed toward timely and in-depth monitoring of the status of budget and fiscal discipline. Emphasized was the need to increase the personal responsibility of administrators of educational organs for a fundamental restructuring of the system of adult general education, as well as for strict punishment of individuals guilty of alteration of records, deception and other violations.

Steps are being taken to expand the practice of external completion of secondary education by working young people, improve its organization and create the necessary conditions for preparing young people for examinations. A new redaction of the "Directive on the Organization of Preparations For and Conducting of Examinations on an External Student Basis for a Course of Incomplete Secondary or Secondary Education" has been drawn up, providing for three months to be allotted to preparations for examinations instead of one month. During this period schools will set up consultations and make sure that external students have the opportunity to make use of libraries and study rooms. Rayons and cities have been given the right to assign external students to the general educational school which is closest to their home or workplace for the purpose of receiving pedagogical assistance.

In conjunction with the AUCITE and the Komsomol Central Committee, the preparation of recommendations concerning joint work by trade union and Komsomol organizations and educational organs in connection with the completion of young workers' secondary education has begun.

In our opinion, it is also necessary to do the following in order to achieve fundamental improvement of working young people's general educational training: at annual meetings of the qualifications commissions of enterprises, organizations and farms decisions should be made concerning

raises in the production categories of the best graduates of evening and correspondence schools, their promotion to higher-paying jobs, their transfer to new equipment and send opportunities for them to study at higher and specialized secondary educational institutions.

We should include in enterprises' plans an index governing the increase in the general educational level of workers in the 16-29 age group, take this index into consideration when tallying up the results of production activity, and compile a list of vocations and skills categories for which secondary education and study at an evening school would be mandatory.

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DEMOGRAPHY

UZBEK CSA OFFICIALS ON PREPARATIONS FOR ALL-UNION CENSUS

Tashkent EKONOMIKA I ZHIZN in Russian No 7, Jul 86 pp 12-14

[Interview with Gennadiy Nikolayevich Kvon, deputy chief of the UzSSR CSA, and Lidiya Alekseyevna Yevina, acting head of the Census and Population Research Department of the UzSSR CSA, conducted by Yu. Modestov: "How Many of Us Are There, and Who Are We?: On the Eve of the All-Union Census"]

[Excerpts] There exist censuses with a great diversity of subject matter, coverage and time frames, but there is no doubt that the greatest and most complex of them all is the All-Union Census. The seventh regularly-scheduled census of this type in our country will be conducted in January 1989, in accordance with a decision by the CPSU Central Committee Politburo and the Soviet Government. Almost two and one half years remain until the beginning of the census, but already major preparatory work is underway; this work is the responsibility of the USSR CSA [Central Statistical Administration] and its local organs.

We have asked Gennadiy Nikolayevich Kvon, deputy chief of the UzSSR CSA, and Lidiya Alekseyevna Yevina, acting chief of the Census and Population Research Department of the UzSSR CSA, to tell us about this work and about the special features of the upcoming census.

[Modestov] What is the significance of the upcoming census, and what will be its special features?

[Kvon] A census makes it possible to obtain reliable and diverse data concerning population, data which are required for analysis of demographic and social processes, specifically, data concerning the composition and distribution of labor resources, the socioeconomic structure of the population employed in the national economy and people's educational level and family status.

All this information is not essential in and of itself, but rather for the sake of scientifically based current and long-range planning, as well as for many types of research conducted by economists, sociologists and demographers, research which forms the foundation of programs for our further development.

I should note that conducting such a large-scale survey is an extremely complex task requiring thorough preparation. The main factor in such work factors is the great expanse of our country's territory, the diversity of natural and climatic conditions, the far from even distribution of population and the prevalence of illiterate and illiterate regions which particularly in January are difficult of access, as well as the need for simultaneous fieldwork, and in addition, the work will be completed about 15 months. At the end of 1988.

[Moderator] What is already done and what remains to be done, respectively, and what remains to be done?

[Kvach] First of all, the State, with the assistance of the local organs, has drawn up a draft program for conducting the survey. This program takes into consideration both the experience of 1974 census conducted and its recommendations regarding methods of execution. The second is that we will be able to employ available data and other sources. This program will be further refined and then, and after an analysis of the survey results which will be conducted in January of this year in 1989, we will begin the survey.

[Moderator] Will this survey be conducted in the country?

[Kvach] Yes, directly. It was designed and has been carried out in the Central Asian republics with participants in the census conducted in 1974. In short, in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. They will undergo training, take part in the census itself and report on the results.

[Moderator] What is the purpose of this additional survey?

[Kvach] This sort of rounds are also being carried out, in order to improve the reliability of the data obtained. They are conducted in separate fields and give yet another opportunity to determine whether errors will not be made by the survey (either through the respondent's negligence or as a result of objective causes, e.g. the subject has gone to a place where the census will not be conducted). It goes without saying that the past census gets conducted in two main forms.

[Moderator] Will there be any differences between the 1989-1990 census and the previous one?

[Kvach] First of all, it will be conducted in a new technical mode. Beginning in 1989 we utilized for the first time a fundamentally new type of census form, which is also simultaneously a means of processing primary information (a citizen's responses) in such a way that it can be entered into a computer for the purpose of further processing of census materials according to a predetermined program. The responses to the majority of questions are registered on the census form with symbols, and only the answers to the more complex questions are written in words, which are then entered on the form.

can be entered into computers. By the start of the upcoming census we will have received the new "Blank-1" optical character recognition devices (OXSU). Lidiya Alekseyevna can best tell you about the merits of these devices.

[Yevina] The advantage of the "Blank-1," which operates as a peripheral to a personal computer, lies in the fact that it can read not only marks, as was the case in the last census, but numbers as well. This makes it possible to increase substantially the amount of information, precision and reliability of preliminary results, reduce significantly the time required to obtain them, and free statistical organs from manual compilation of data.

I will explain. The compilation of final results is a process requiring months. However, it is very important that administrative and planning organs receive the preliminary results on the basic questions on the condensed program as quickly as possible. Manual compilation of these preliminary results used to require a great deal of time. We plan to supply data processing centers in the majority of oblasts with these devices.

[Kvon] Census-87 will also have another special feature. The draft program provides for some changes in the questions asked. As you are aware, the All-Union Census is divided into two parts: the mass census and sampling. The mass census contains the following basic questions: sex, age, marital status, ethnicity, native language, languages of USSR peoples in which the subject is fluent, educational background, source of income and a few others. This time one question will be added to this list, i.e. information on whether the subject has completed a vocational and technical school. Every single member of the population should be asked these questions. The sample census will consist of almost twice as many questions, and will encompass only part of the population (that portion was 75 percent of the total population in 1979; this time the percentage has not yet been firmly established). This sort of partial survey is conducted for the purpose of saving time and expense in conducting it and processing the materials obtained. But it is essential for the purpose of obtaining supplementary information, for instance information concerning the nature of employment, place of employment, membership in a particular social group, migration of population and number of children. An additional list of questions is being introduced which will indicate the population's living conditions, as part of the party's course toward fundamental improvement of those conditions.

[Yevina] I would like to add that the way in which the basic and supplementary questions are formulated has been changed and refined somewhat. Thus, whereas previously all that was necessary was a simple answer as to whether one were married or not, now this question has been made somewhat more detailed: is it a de facto marriage, or one which has been legally registered? On the sample census it will be essential that we find out how long an individual has been living in a given place, where he moved there from, and in what year; this serves the purpose of giving us a clearer picture of population migration trends. When recording the number of children, it will be necessary to indicate how many of them were live births.

There has been quite a bit of confusion about the question concerning "relationship to head of household." On this point there is often

disagreement among households. In some families a grandfather or grandmother is regarded as the "head of the household," while in others it is a husband or female spouse. Now this question has been formulated somewhat differently: relationship to the person indicated first on the census form. In many countries, this is the way in which this question is formulated in many European countries.

[Modestov] How are the preparations for and organizations of the All-Union Census being planned, and what difficult problems remained to be solved in this respect?

[Yevina] Our greatest worry as employees of statistical agencies is the scandalous disorder which prevails in our address system.

In order to avoid mistakes and confusion when conducting the census, we must compile a list of urban-type populated places which are recognized as such by law, so that we will be able to correctly differentiate between urban and rural population.

The next stage is to determine by 1 July next year the boundaries of urban-type settlements, obtain a complete list of their street names and the numbering system of their districts, apartment buildings and individual apartments. On the basis of these data, we must prepare new statistical material -- maps of urban-type settlements and major villages, and by the beginning of 1988. By the same date we should have completed work on the correctness and completeness of the current record of the population residing in urban-type settlements and villages.

I should note that as a result of major housing and industrial construction and replanning of certain parts of cities, their boundaries have changed, as a rule with a tendency toward expansion. This applies to both the capital of our republic and to some oblast centers.

However, as of this time, for example, the boundaries of the city of Yel'tsin have not been precisely determined, taking into account all the changes which have taken place since the 1979 All-Union Census. In Karskiy Rayon has come into existence the new settlement of Sputnik, where city residents also live. The settlement's population is urban, but the area in which it is located is listed as rural.

In 1978 the urban-type settlement Taylyak was established in Samarkandskiy Rayon. Up to the present time it continues to keep farm households. The settlement council has not laid out streets or given them names, and there are not even any house numbers.

The checks which have been conducted by employees of statistical agencies have revealed many shortcomings in the way in which our system of addresses is set up: there are streets, alleys and thoroughfares bearing the same name, signposts with street names are lacking, as are house numbers, particularly in areas of new construction, and a disorganized system of numeration has been noted; the majority of the house number signs are nonstandard and faulty.

Incidentally, this confusion in our republic becomes an acute problem not only when making preparations for the All-Union Census: it also creates difficulties for communications enterprises and health care facilities and complicates election campaigns for Soviets of people's deputies.

[Moistov] The republic CSA is the headquarters for preparations for the census, but a headquarters must have an army. Are not statisticians alone incapable of carrying out such a complex and responsible campaign, which is of great economic and political significance?

[Kvon] Undoubtedly. Local statistical organs will see that all the necessary measures are taken, and a large body of census-takers, instructor-supervisors, directors of census departments and their assistants will be active participants in the census itself. All of them will be obligated to undergo the appropriate training, with time off from their jobs and with final exams which must be passed. For example, we trained over 50,000 people in short courses for the previous All-Union Census; of those, 40,000 participated directly in the census. As you can see, we trained a reserve of extra people. That reserve is essential. The census must be completed over a very limited period of time, and often it becomes necessary to replace our volunteer helpers for various objective reasons, such as illness or business affairs.

In 1958 we will already be well underway with the training of instructor cadres. We will attempt to select as our first census takers who have already participated in this type of endeavor and have a certain amount of experience.

CHAYKONT: "Ekonomika i zhizn", 1958

1958

Doc: 164876

DEMOGRAPHY

1985 DEMOGRAPHIC ENCYCLOPEDIA DICTIONARY CRITIQUED

Moscow VESNIK STATISTIKI in Russian No 8, Aug 86 pp 58-59

[Review by G. Kildishev of book "Demograficheskiy Entsiklopedicheskiy Slovar" [Demographic Encyclopedic Dictionary] published in Moscow by Sovetskaya Entsiklopediya, 1985]

[Text] --Moscow--The encyclopedic Dictionary, one of the works to result from the science of demography's difficult course of development, is designed to be used by scholars and field personnel involved in population issues, as well as by teachers and students at educational institutions.

The Dictionary is the result of the tremendous efforts of a large group of Soviet and foreign scholars involved in the study of population. It discusses certain sciences' main ideas about population and suggests ways that these ideas are reflected in such disciplines as philosophy, political economy, and scientific communism.

The population data for individual areas are for years which are close to the date of publication, for which the Dictionary should be commended.

The main text of the Dictionary contains 1,351 entries, while the total, if the 17 appendixes and 267 bibliographic notes in the index of last names are counted, comes to 1,635 terms, concepts, and articles on scholars. Besides the 114 entries for lexical concepts dealing directly with population study, 54 of the entries are on the population of the union republics and autonomous regions, 171 deal with the population of other countries of the world, and 218 treat important figures in the field. The editorial board, under the leadership of Professor D.I. Valentel, has done a tremendous amount of work in collecting and systematically organizing the theoretical and empirical material. The significance of their accomplishment becomes even greater when we remember that the USSR is now the first country to publish such a dictionary.

The Dictionary contains a huge amount of statistical material on the population of the republics and autonomous entities, as well as on that of foreign countries. This makes it an invaluable handbook for scholars, field personnel, teachers, and students, while it is also useful to propagandists as

a source of information on population. The book is especially appropriate for people studying demography and population statistics. In addition to standardized information on the population of individual countries and national entities within the USSR, the Dictionary has several interesting appendixes. These include: the number of years of censuses in the countries of the world between 1790 and 1982; Russian censuses; and the content and wording of the questions used in pre-revolutionary population censuses in Russia. The work also cites fragments from the census questionnaire used in the 1981 British census. The appendixes show: the population of the USSR according to 1939-1979 censuses; and the population of republics, krais, oblasts, and autonomous okrugs as of 1 January 1984. They also provide information on: USSR cities with a population of 100,000 or more as of 1 January 1984; the distribution of national populations in the areas where they live (according to data from the 1979 census); the distribution of the USSR and union republics' population by source of livelihood; the distribution of the population by social group; the distribution of the population by marital status; the number of families and their grouping by size; and the distribution of families by type and size. The Dictionary also cites basic demographic figures for foreign countries.

However, the Dictionary also contains several errors which are unacceptable in an encyclopedic work. The first is the stubborn usage of the ponderous term "national population" instead of population. Moreover, the Dictionary insists that the two concepts are identical and states repeatedly that they are synonyms which, when translated from Russian into other languages, are rendered by the same word in that language. A similar error is made when demography is defined as a science. In this case, the Dictionary states that demography studies the reproduction of the population in a socio-historical context. This is rather vague and not at all close to the direct knowledge of a subject and problems that a science of population should be. It is also surprising that the definition offered in the Dictionary says absolutely nothing about the link between demography and population statistics. It is inadvisable, of course, to identify demography with population statistics, although it is pointless to try to deny their common features.

Another amazing error is the omission of demographic statistics from diagram 1, which depicts the system into which knowledge about population is organized (p 407). At the same time, the system of demographic sciences is interpreted much too broadly (see diagram 2 on p 407). Diagram 1 places the following in this category: labor resources economics; specific disciplines within sociology; labor and family law; and ethnography and other related sciences. At the same time, diagram 2 contradicts diagram 1, which includes theoretical demography, the history of demography, and other fields in the system of demographic sciences. Once again, no mention is made of statistics. The entry on demographic analysis on page 17 notes that the Dictionary does not include population statistics in its ambit. According to the entry, the quantitative relations between demographic processes, as well as among the structures and dynamics of population, can be studied using only mathematical and demographic methods and without statistics.

We should note that demography must incorporate population statistics into its methods. Instead, more substantial arguments are needed to prove that there is a difference between the demographic and statistical approaches to

...difference which becomes more evident if demography is interpreted as a science dealing comprehensively with population, while population statistics is treated as a science dealing with the quantitative aspects of population.

It is not suitable for works of this kind to concentrate too heavily on one topic. In our Dictionary, 225 entries, comprising almost one half of the total number of pages, are devoted to the population of individual areas. Of course, specialists in population geography will find the age and sex make-up of the populations of various countries very interesting, but specialists dealing with population itself will be more interested in the ways the population reproduces itself. These modes of reproduction can be described adequately without using unwieldy and at times exhausting age and sex pyramids. As a matter of fact, pyramids of this kind have been constructed in this work for very large countries with populations in the millions and for small states such as Monaco, with a population of 27,000, and San Marino, with a population of 15,000. In all the above cases, the pyramids fail to reflect population development adequately with sufficient clarity.

One of the great strengths of the Dictionary is its biographies. Those demographers no longer alive are treated in the main body of the work. Unfortunately, N. Ya. Vorobyev, the author of an interesting work on the 1926 All-Union Population Census, is forgotten. The index of last names tells us about the rest. Again unfortunately, several Soviet scholars involved in population problems have been omitted. No mention is made of the great statistician of culture and education I.M. Bogdanov, who is a corresponding member of the USSR Academy of Pedagogical Sciences, or of A.S. Semenova, who contributed so much to the development of demography and taught many of the authors of the Dictionary.

Generally, demographers have lost sight of education in their studies of population, and this area has thus not found a place in the Dictionary. Yet the educational and culture of a population are important indicators of its level. The following elements are absent from the Dictionary: education, literacy, educational level, access to education, educational potential, cultural level, and methods for measuring the foregoing. In addition, "quality of life," a concept that is widely used now in the social sciences and economics, is absent. The sections dealing with health and living conditions are given the appearance of treatment, although there is an entry on housing legislation with a slightly legal bent. In our opinion, the artificial term "demographic legislation" is not justified, since no such term exists in the legal lexicon.

The index of names contains entries on many people who had nothing to do with demography as a science, but could have included quite a number of other figures in political economy, philosophy, and mathematics, such as the demographically "inclined" theologian and philosopher Foma Akvinsky, or others like Robert Francois, LaSalle Ferdinand, etc.

Several concepts are not sufficiently accurate. For example, on p 255 infant mortality (death in the first year of life) is confused with child mortality (death during childhood). The mean annual growth of the population of the USSR, given as 8.4 percent is dubious. The term "church records" is not explained in sufficient depth. In the opinion of the author of the entry, the

term refers only to the recording of marriages, although both births and deaths are also recorded in church. The head of the family is referred to as its leader, an interpretation found in sociology and philosophy. But in population censuses, the purpose of asking who the head of the family is (when the question is asked) is to ascertain which member of the family will be entered first.

The appendix distorts certain facts about population censuses when it indicates that Denmark conducted a census in 1981, although no such census took place that year in Denmark or the other Scandinavian countries. What the Dictionary has done here is use data from population registries, since previous censuses have shown that data from censuses differ only negligibly from those in registers. Moreover, the Scandinavian countries conduct censuses only in years ending in 5 and 0. Hence, where did the authors come up with 1976 and 1981?

The Dictionary is also flawed by mistakes in the use of statistics. For example, the entry on mean population states that mean population is calculated as the mean chronological value. However, this value is calculated differently depending on whether we are speaking of an interval or an instant series for a particular dynamics. The authors should have added that the mean chronological value was for an instant series. The term "modal growth" is nowhere to be found.

The Dictionary's mathematics are excessively cumbersome and difficult to understand, even for persons conversant with mathematics. We hope the authors will have further opportunities to refine their work on and descriptions of concepts and definitions pertinent to demography. With the publication of their Dictionary, they have quite successfully negotiated the important first stage in their effort to assist demographers.

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13189/9312

CSO: 1828/142

RAIL SYSTEMS

LEGAL CHANGES PROPOSED TO COMBAT RAIL FREIGHT MISHANDLING, (REF)

Moscow SOTSIALISTICHESKAYA ZAKONNOST in Russian No 7, Jul 86, pp 26-28

[Article by D. Trusov, Moscow Transport Procurator's Office, and V. Sedulin, Northern Transport Procurator's Office: "What Keeps Us from Establishing Order?" passages enclosed in slant lines printed in boldface]

[Text] The question is not new: How to make a breakthrough in the struggle with mismanagement when shipping by rail? However, the question remains acute, particularly for the Moscow and Northern Railroads. The national economy is suffering losses which are entirely unjustifiable as a result of damage and loss of cargo and non-productive utilization of rolling stock. It has long been clear to all that one of the chief causes for these losses is the separation of freight from documentation. So much has been written and said about this problem that it would seem that it is time to establish order. But, in fact, there have been no true improvements. Why, and what are the ways and means for eliminating them?

In February and March of this year, the Moscow and Northern Transport Procurator's Office conducted for the first time a joint check-up on 4 contiguous divisions: Moscow-Kursk and Moscow-Yaroslavl of the Moscow Railroad and the Yaroslavl and Ivanovo divisions of the Northern Railroad.

Let us say a few words about the organization of the check-up. It was participated by workers of the rayon and oblast transport procurator's offices following the same methodology and going out to the shunting stations. The checkers continuously exchanged working information. Workers from the Northern Transport Procurator's Office went out to stations on the Moscow Railroad, where they checked the completeness and the timeliness of measures taken to combat cargo separations which had been permitted by the railroad under their supervision; this work was done in coordination with local procurator's offices. The work was carried out in like manner on the Northern Railroad as well.

This type of interaction of transport procurator's offices of the Republics permitted us to delve more deeply into the essence of the problem and to work up a number of organizational questions concerned with improving the management mechanism for freight shipment.

/Separation of freight from documentation, and this also means unsecured shipment, as a rule are associated with organizational and technical shortcomings in rail transport activity and with violations of the regulations of shipping./ This is facilitated by the negligence of engineering office operators, operators and duty personnel at mechanized gravity yards, train organizers, shunting dispatchers and switchyard duty personnel. Procedures are sometimes disregarded in shunting and sorting the cars, and the qualifications of workers who service the freight is still low; the work of acceptance inspectors and a number of other services needs radical improvement.

It was revealed that year in and year out, in violation of regulational requirements, formal commercial documents are often not put together in cases of separation [of freight and documentation], and operative dispatches are not sent out in accordance with established procedure. For example, in the fourth quarter of 1985, 739 cars arrived at the Main Yaroslavl station without documentation, and 289 sets of documents arrived without cargo. In all 5 sets of commercial documents were filed, and 1023 "separations" remained unaccounted for. The statistical bookkeeping about "separations" does not correspond to the true state of affairs at a number of other stations as well. All of this is done with the aim of enhancing results, of creating a favorable appearance. Similar facts were revealed upon making an audit of the stations' commercial activities; however, control over actual elimination of these shortcomings and instances of falsification of bookkeeping records and documents is not being realized. The auditing apparatus itself is not reacting to this condition.

In spite of the measures being taken by the railroads' administrations, /the level of investigatory work does not meet today's requirements. / In violation of the regulation on investigation of cargo on the railroad, operational reports are not sent and investigative sections do not take emergency measures to join up freight with its documentation, as a result of which cars without documents stand at the station with their cargo for considerable lengths of time. For example, the engineering office at Yaroslavl Station replied to operational reports from Darnitsa and Bryansk stations only after the fifth inquiry.

/Facts concerning non-productive runs of cars separated from their documentation remain unheeded by officials of the railroads' divisions and administrations./ Often such cars with cargo without documentation are dispatched together with empty cars, and are returned to the station where they were formed up without legal basis for this action. More than 800 cars were thus returned at just 4 stations for the year 1985 and January of this year. An approximate estimate shows that their run was 58.7 million kilometers, and material losses were 170,000 rubles. The labor of 32 locomotive brigades, hundreds of thousands of kilowatt-hours of electricity and hundreds of tons of fuel were wasted on these useless shipments.

We propose /to re-examine the current Rules for Freight Shipment to the end that cars are dispatched with mandatory plates (stencils), on which the requirements of the stations of origin and destination are noted./ This will permit the nonproductive car runs to be reduced, the results of "separations" to be eliminated earlier and the cargo to be delivered to the addressee more promptly.

Criminal action and sentences were carried out against 16 persons. Likewise, at Priston Station in August 1985 alcohol was stolen from a tank car that stood without documentation for a prolonged period. Materials from other criminal cases bear witness to similar occurrences.

Non-satisfaction of requirements in the shipping rules for holding periods for cargo without documents also exerts considerable influence on security. On the Northern Railroad, 19 cars were selectively determined to have been standing idle for a total of 2,448 days waiting for handling. And on the Moscow Railroad, 168 cars with such scarce cargoes as cement, petroleum products, ore and grain were idled for 18,000 days. Other cargoes were removed from economic circulation for a lengthy period. Tollage is not levied properly for their recovery, and red tape in a number of cases resulted in their waiting. At the Polotnyany Zavod Station of the Kilmuzhsk Railway, a car with heat pipe stood for 2 months; not putting it to use in a timely manner resulted in its spoilage and subsequent destruction.

At the same time, delivery of freight is accomplished in most cases with no violations of rules for transfer of cargo to other organizations, and the permission of local Soviets is not being sought and obtained. This is often done when resources are being delivered by railroad organizations.

The situation is the same with deliveries of construction equipment and small shipments. Even after having been given permits for delivery, many cargoes go to warehouses, where they are often stored for years. At Tula Station 3 power cables lay around for almost 5 years; 10 lathes at Zhidovsk's works for 2 years and a lathe for a year. At the same time, the lack of appropriate storage conditions at the warehouses and untimely deliveries often result in spoilage, deterioration of quality and destruction of irreplaceable commodities. In our view, given such conditions, it is necessary to make refinements to sections 15 and 16 of the rules for freight transportation and to set deadlines for issuing permission and delivery of cargo without documentation.

There are facts that show instances when a large quantity of freight is not reaching the consignee since it is being delivered to outside organizations. Just in 1985 claims were made against the Moscow Railroad for 31 million rubles for non-arrival of freight, of which 1.5 million rubles were paid by the railroad because the freight was not located at all. The remainder of the cargo was recovered in part and turned over to the consignee, and also delivered.

The check-up showed that in spite of repeated demands on the part of the MPS [Ministry of Railroads], railroad management and law enforcement agencies, the causes of "separations" are not analyzed to this day. There is still not the requisite demand from managers and the immediate executors. It is therefore necessary to increase the responsibility of the managers of all units, particularly of the services and traffic departments for the state of affairs in this area.

Moreover, far from all of the transport procurator's offices have yet to delve into the matter with a sense of responsibility, have not taken up an active aggressive position. The procurator's supervision is still not yet yielding the needed result in solving this most important of problems for transportation.

In our view, it is necessary to change a number of regulations and ministerial decrees which are intended to avert "separations," improve record keeping and the investigation of similar instances, improve the responsibility of the railroads for fulfilling plans for freight shipping and security and the principle

of the inevitability of material responsibility; to institute penalties in the form of fines for separation of cargoes and documents which would be reflected in the station's operational indicators; to re-examine the current indicators in the area of calculating losses from idle time for cars separated from their documents, from violation of the plan for train formation and untimely delivery of cargoes; and to establish a technology for inspection of formed trains and on-site verification of the cars, comparing it with the commodity list and with transportation documents at the stations where the trains are formed up and division stations when transit trains are passed through.

* * *

The procurator's office has taken measures in response to the materials of the check-ups: 15 officials have been called to disciplinary accountability; under the terms of Art. 41 of the RSFSR GPK [Civil Procedural Code], 5 suits have been filed against managers; warnings have been issued concerning the integrity of violations of the law; and the Moscow municipal and the Moscow and Yaroslavl oblast committees of the CPSU, USSR Ministry of Railroads and labor collectives have been informed.

The results of the check-up were discussed at a joint, broadened meeting of the Colleges of the Moscow and Northern transport procurator's offices, with responsible parties from the MPS, managers of the railroads, services, divisions, departments and stations and regional transport procurator's offices participating. USSR General Procurator N. Bazhenov spoke first and participated in the work of the college. Having emphasized the critical nature of the question under discussion, he spoke about the problems impending for workers in rail transport and the transport procurator's office in the struggle with law violators in light of the decisions of the April (1985) Plenum of the CPSU Central Committee and the 27th CPSU Party Congress.

Critical comments were expressed and concrete proposals were made, and measures were noted for eliminating shortcomings in work to avert separations of cars and documents. A joint resolution was adopted out of the results of the debate: It will be monitored by the two procurator's offices.

We suppose that the check-up and debate of its results at the joint meeting of the colleges of the Moscow and Northern transport procurator's offices and constant monitoring of the elimination of shortcomings and oversights which showed up will promote a radical improvement in the state of affairs with the separation of freight from their shipping documents and a strengthening of lawfulness on the railroads.

FROM THE EDITORS: /For the initiative they showed and for their active work in the struggle with violations of the law on the security of socialist property, the following individuals were awarded a bonus by directive of the USSR General Procurator's Office: AUTHORS OF THE ARTICLE, as well as head of the general supervision division of the Northern transport procurator's office R. Rayzman; A. BALAKIRYEV, head of the Moscow transport procurator's office; V. ALYEYNIK, assistant procurator of the Moscow-Yaroslavl transport procurator's office; Yaroslavl transport procurator YU. TOLOKONNIKOV and R. MAKAROVA, assistant procurator of the Moscow-Kursk transport procurator's office./

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RAIL SYSTEMS

2M62 DIESEL LOCOMOTIVE DEVELOPMENT

Moscow ELEKTRICHESKAYA I TEPLOVOZNAYA TYAGA in Russian No 7, Jul 86 pp 30-31

[Article by MPS [Ministry of Railways] TsT [Locomotives Main Administration] New Diesel Locomotives Department senior engineer Yu. V. Kondrakhin: "The 2M62 Diesel Locomotive: Stages of Improvement and Prospects"]

[Text] In 1976 the Voroshilovgrad Diesel Locomotive Production Association began the series production of the 2M62 mainline double freight locomotive with 2 x 2,000 horsepower of power. It meets modern requirements for design execution and technical and economic parameters, and in reliability it exceeds all of the freight locomotives currently existing on the railroad network. The locomotive was thus awarded the highest quality rating four times.

The design of the 2M62 diesel locomotive has been improved continuously since the beginning of production. Thus, over the 1976-78 period, prismatic bearing joints were incorporated to provide for the rapid removal of the covers during repair, and a braking apparatus was employed that automatically sheds the load and simultaneously feeds sand under extreme braking.

A push button was installed for shunting operations that provides for additional convenience in controlling the locomotive during coupling with the consist, along with an improved and operationally reliable 42RIM-A2-4M radio unit. A hand water pump was installed to make it possible to top off the water system by hand. Full-flow filters were incorporated for the fine cleaning of oil which ensure a high quality of filtration for the diesel oil.

Improvements in the 14DG diesel generator in those years proceeded along the lines of increasing the longevity indicators, raising reliability and reducing oil consumption, as well as improving the indicators of the automatic diesel regulator system. Run time between repairs was increased in this period for the TR-2 from 150,000 to 200,000 kilometers, for the TR-3 from 300,000 to 400,000 km and for the KR from 750,000 to 800,000 km.

The following design changes were incorporated on the locomotive in the 1979-80 period: a heating and ventilation unit; a standardized track cleaner which can be regulated for height above the rail head; standardized steel doors, locks and housing for the high-voltage chamber; commutators for the cooling chamber in box-section shape (in place of welded ones); a two-needle pressure

gauge; and, a bolster spring suspension with staggered rollers. Also incorporated were preliminary network signalization for the ALSN vigilance system and illumination for the dials and tapes of the speedometer. Furthermore, diesel oil consumption on these locomotives was reduced: from 2 to 1.7 grams per horsepower-hour for fires and from 2.25 to 1.95 grams per horsepower-hour overall.

Principal Technical and Economic Indicators of 2M62 Diesel Locomotive

Parameters	2M62	-----Foreign analogues----- (Nizhny) --Sweden 1975 model		26CW-2 diesel locomotive, General Motors, United States
Nominal power of diesel, horsepower	2 x 2000	1950		2200
Axial formula	3_0-3_0	3_0-3_0		3_0-3_0
Rated speed, km/hr	100	105		105
Traction force in diesel mode	2 x 19.5	26.13		20.8
(at speed, km/hr)	(20.9)	(15.0)		(16.6)
Axial load, tons-force	20 +/- 3%	18.1		20.41
Proportionate fuel consumption, grams per horsepower-hour	158 ⁺⁹	173.5		165 (roughly)

The 2M62 diesel locomotive underwent the most changes in the 1981-84 period. A pneumatic system for automatic temperature regulation with DTM sensors was installed on the locomotives in these years, which provided for stability of temperature support for the heat-transfer agents and, as a consequence, reduced fuel and oil consumption.

In order to increase traffic safety, a braking system was incorporated that provides for a distance of 1,000 meters by way of engineer lever or release of brakes in self-uncoupling. The locomotives are equipped with air cleaners and multilayer cassettes which make it possible to raise the extent of air cleaning for electrical machinery up to 80 percent.

With the aim of reducing the consumption of sand (along with the possibility of feeding it under the first and fourth wheel pairs), a feed system was incorporated for only the first wheel pair, and the design of the sand-blower was altered as well. A system for protecting against stray currents on each line of the coupling train was introduced (a system for detecting ruptures in the coupling signal of the traction engines).

In order to improve the fire safety of the diesel locomotive, a fire-signal circuit was incorporated with IPL-125 detectors. A trio of full-flow filters with compensating elements and a domestic Morozko refrigerator were installed. Further incorporated were: a standardized fuel-pump unit; an improved-design hand pump; and, a standardized signaling device. New electrical devices

replaced old ones: MK contacts in place of TKM ones; VL-50 relays in place of VL-31; and, a VP-1 unit in place of KV-2A.

Face sealing with an SG-T on SG-T friction pair was incorporated in the water pumps in that period on the 14DG diesel locomotive to eliminate water leakage and raise the reliability of the unit. The reliability of the piping system of the oil from the oil pump to the centrifugal filter was improved through the utilization of a sleeve made from new material and the assurance of a flexible joint with this sleeve.

Other design, technological and organizational measures were implemented that ensured a reduction in oil consumption of up to 1.5-1.9 grams per horsepower-hour on the new diesels.

The plans for measures to improve the design of the 3M62 diesel locomotive for 1983-87 envisage: the manufacture and testing of locomotives with an enlarged fuel tank of 7,300 liters capacity (for the 2TE10M diesel locomotive); the incorporation of ED-118B traction engines with a circulation system for the lubrication of motor and axle bearings; the introduction of protective circuitry against breakdowns at any point in the power coupling and braking system that provides for the braking of sections when they uncouple themselves and envisaging the installation of No 367000A blocking braking. The locomotives will be equipped with a railcar-type transitional area (with rubber cylinders), SI440-B windshield wipers with an increased wiping area, doors with an improved design, an improved air-foam fire-extinguishing system and a powder fire extinguisher (for the 2TE116).

Testing will be carried out on an experimental lot of diesel locomotives equipped with a rear-distribution transmission drive with a clutch with roller clutching elements and with a new design for the muffler from stainless steel (for the TE116). The replacement of obsolete electrical apparatus with new ones is proposed: installing VK-type push buttons in place of KYe ones; AYc-type automated units in place of A3161 ones; the headlight lamps (KCM types); the Zh-type signalization and illumination lamps; the Luch lighting fixtures for under-lighting; and, T-35 sensors in place of KRM relays.

In order to provide for growing freight shipping, in 1983 MPS ordered the 3M62 triple diesel locomotive with an axle load on the rails of 21 tons of force, non-pedestal trucks and increased fuel (7,300 liters) and sand (700 kg) capacities. All of the improvements enumerated above will be incorporated on the 3M62 diesel locomotive.

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CSO: 1829/318

RAIL SYSTEMS

IMPROVED DR1A DIESEL COMPUTER TRAIN MODEL

Moscow ELEKTRICHESKAYA I TEPLONAVIYAYA TRANZA in Izvestiya No 7, Jul 86 pp 31-32

[Article by Riga Railcar Building Plant Deputy Chief Designer V. F. Gortenko: "The New Model DR1A Diesel Train"]

[Text] A modernization of the DR1A model 63-341 diesel train, produced since 1979, was carried out at the Riga Railcar Building Plant (RZV). Its aim was to improve the technical and economic indicators and raise the reliability of this train, as well as to reduce labor, power and material expenditures for its operation.

The new 63-349 model DR1A diesel train consists of six cars: two motorized lead sections and four trailer cars. The number of cars can, however, be brought to twelve (with the coupling of two diesel trains together). One engineer in the lead cab can control such a consist.

The plan of the motorized car is presented in Figure 1, and that of the trailer cars in Figure 2. The principal distinctions of the new-model diesel train are the following. Its braking distance at a design speed of 120 km [kilometers] an hour is 850 m [meters] instead of 1,000 m. This effect is obtained through an improvement in the air-brake system and, in particular, the installation of a throttle at the entrance to the reserve tanks of the air system of each car. As a result, the rapid action of the brake using pneumatic control is improved and the time for preparing it is reduced.

The economy of the diesel train has been improved thanks to the incorporation of two operating modes for the diesel in idling mode (650 and 850 rpm [revolutions per minute]) and a reduction of the allowed pre-discharge temperature of the water and diesel oil. This can provide an economy of diesel fuel of up to 6-7 tons a year.

More reliable brake disks have been employed. The DR1A diesel train was earlier equipped with brake disks that had a limited service life (thermal cracks appeared on their friction surfaces in operation). Heat-dissipating grooves have been made on the working surfaces of the new disks, which preclude the appearance of such cracks. The service life of these parts, according to the jig testing that was carried out, was increased by 7 times compared to the old-design disks.

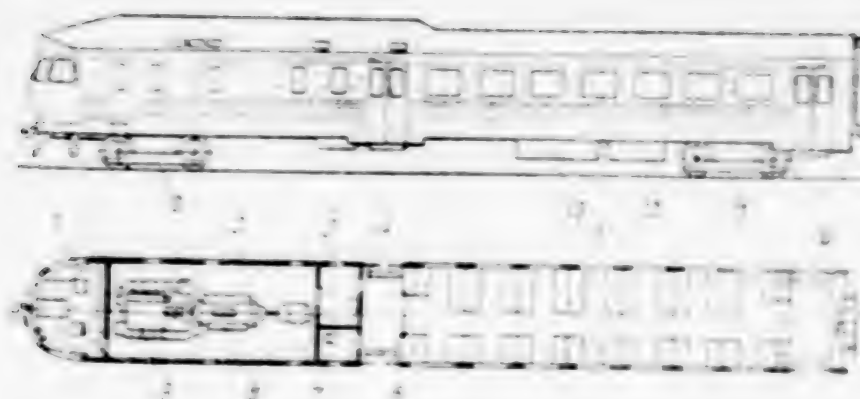


Figure 1. Diesel locomotive.

1--driver's cab; 2--engine compartment; 3--cooling system; 4--boiler; 5--generator compartment; 6--entry vestibule; 7--starter-generator; 8--boiler; 9--hydraulic transmission; 10--power truck; 11--control truck; 12--fuel tank.



Figure 2. Diesel trailer car.

1--passenger car; 2--entry vestibule; 3--coupler.

Changes were made in the electrical circuitry of the diesel train that increase the reliability of its operation and reduce useful and maintenance expenses. Thus, EDU-1-type diesel-locomotive-stationary relays have been employed in place of EDU-448 intermediate relays. EDU and EDU-4 on-board temperature sensors, used to monitor the operation of the power plant, have replaced EDU-type relay sensors, while EDU fire detectors have replaced EDU-type ones. All of these instruments are specifically intended for railroad rolling stock and have greater reliability.

A shunting excitation coil for the starter-generator was included in the electrical coupling for diesel start-up in addition to the starter coil of the

starter-generator. This increases the torque of the AGO, reduces the peak current and improves the operating conditions of the accumulator battery. Engines of maritime design were utilized in place of series-P electric engines for the industry-wide design. The new 415GU starter-generator has been designated for diesel start-up.

Complaints about the unsatisfactory accessibility of the accumulator batteries, located in special boxes under the car, had earlier been heard from the operators. The design of the accumulator-battery boxes on the new model diesel train was correspondingly altered for ease of battery servicing. Furthermore, the resistance of their insulation was increased through the introduction of an additional insulating plate between the box housing and the accumulator batteries.

Service life was extended from 12,000 to 14,000 hours for the replacement of the principal power unit--the MT56B diesel--which reduces expenditures for the repair of the diesel train. Leafs were employed on the exterior sliding doors of the new model, the interior chambers of which were covered with an anticorrosion mix, and the entry steps prevent the accumulation of snow, dirt and moisture under them, which in turn reduces body corrosion. A strengthened frame was incorporated for the power plant in the area of the tip of the auxiliary discharge of diesel power.

The working conditions for the train crew supporting the diesel train have been improved. An improved lighting system for the engineer's compartment and the control panel were introduced for this, a new speedometer with an illuminated dial and a tape-rolling mechanism were installed and the soundproofing of the partitions and door separating the compartment from the engine section has been strengthened. The equipping of the diesel-train crew with a Signal-type passenger--train crew communication system ensured reliable communications between the train crew and the passengers when needed.

The changes touched on the passenger compartments as well. A more stable decorative plastic was employed to finish their walls and ceiling which has patterns of a soothing nature on it. The passenger seating is covered with a new and improved-quality material. An automated unit operates in the compartment heating system which makes it possible to maintain a more regular air temperature in winter.

The new-model diesel train is distinguished by more aesthetic exterior paint. It is painted in a blue or red color in combination with longitudinal light-gray stripes.

In creating modern rolling stock for suburban routes, the Elga car-building workers are realizing one of the chief tasks in the sphere of transportation--increasing the speed, comfort and efficiency of suburban passenger transport.

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CSO: 1829/116

MARITIME AND RIVER FLEETS

BRIEFS

BULK CARRIER ARNOLD SOMMERLING OPERATIONAL--(TASS)--The vessel "Arnold Sommerling" departed from the piers of the seaport of Tallinn. Proudly bearing the name of the courageous leader of the Komsomol of Estonia, the large bulk carrier embarked on its maiden voyage. [Text] [Moscow VODNYY TRANSPORT in Russian 31 May 86 p 1] 12912/12947

DNEPER-BUG CANAL RECONSTRUCTION--(TASS-Pinsk, Brest Oblast)--The Dneper Bug Canal, the most important transportation route of the Polesye region, is experiencing a rebirth. Reconstruction of the canal has been completed on the portion where freight vessels had to slow down due to a sharp turn and narrow passage. According to the plan developed by specialists of the Giprorechtrans [Hydro River Transport] Institute, almost 150 kilometers of vessel passage have been modernized within recent years. The 22-meter canal has been widened to 40 meters and is now one meter deeper. Wooden dam and floodgate facilities at hydraulic developments have been replaced by reinforced concrete units. Renovation of the transport route has allowed the fleet's turnover rate to accelerate by days. [Text] [Moscow VODNYY TRANSPORT in Russian 15 Jul 86 p 1] 12912/12947

NEW OIL SHIPMENT LINE--(Astrakhan)--The new oil-loading transport line is working like a conveyor. From the Volgan, the vessels complete trips to the Black Sea port of Tuapse, first along the Volga and the Volga-Don canal, and then they come down the Don into the Azov and Black Seas. The crews of many tankers, despite the complexity of the route, are attaining decent economic indicators. The collective of the tanker "Volganeft-157" has been awarded a pendant for its success during the first 6 months of the year. [By A. Golovko] [Text] [Moscow SELSKAYA ZHIZN in Russian 23 Jul 86 p 1] 12912/12947

AUTO CARRIER ALEKSANDR STAROSTENKO OPERATING--The national flag of the USSR has been hoisted on the horizontally-loaded motor ship "Aleksandr Starostenko", built at the ship-building plant imeni A. A. Zhdanov for the Baltic Shipping Company. The new ship is commanded by an experienced sailor with 20 years of seniority, a captain of long-distance navigation, A. Martynov. The new vessel was named after the main designer of vessel steam turbines, created at the Kirov plant. The major designated purpose of the vessel is to transport "Zhiguli" passenger vehicles for export. Loading and unloading of the vehicles will be carried out by means of a progressive skidding method via the

ramp. The wheeled equipment is kept in the hold, on two motor vehicle handling decks and on the main deck. The ship can load up to 500 motor vehicles on board in all. On the day following hoisting of the flag, the vessel came for loading to the PPK-7 wharf of the Leningrad Trading Seaport. The maiden load of vehicles was brought onto the new vessel by docker-machine operators from brigade No. 324, led for many years by the Hero of Socialist Labor I. Romanov. Acceleration has become the main motto this year of the sailors of the Baltic Shipping Company and of the port workers. The vessel was loaded in less than 24 hours. The "Aleksandr Starostenko" left on its maiden voyage headed for Hull (Great Britain). Afterwards the ship will cross over to the West German port of Bremen, where it will pick up wide-diameter piping for main gaslines bound for Leningrad. [By V. Eliseev, staff correspondent] [Text] [Moscow VODNYY TRANSPORT in Russian 5 Aug 86 p 1] 12912/12947

NEW FAR EAST OIL SHIPMENT LINE--[Izvestiya, Khabarovskiy Kray]--The path for petroleum products shipped from Komsomolsk-on-Amur to Magadan has become 2000 kilometers shorter. Until recently, fuel and lubricant materials went in tanks to Vladivostok or Nakhodka, and were then loaded into marine tankers. Now the Amur River Shipping Company has opened a regular line from Komsomolsk to Magadan for "river-sea" type oil-loading vessels. The crew of the multi-ton power-fed tanker "Volgoneft-301" was the first to traverse the northernmost route. In less than 100 hours the riverline workers delivered to the capital of Kolyma the diesel fuel produced at the Komsomolsk oil distribution plant. With the opening of the new line the cost of transporting the fuel has been reduced more than threefold. In the near future the Amur riverline workers will supplement their fleet with the new modern power-fed tankers "Volgoneft-167" and "Lenaneft-2059". This will allow them to augment significantly the volume of loads of fuel shipped into the regions of the Far North by the shortest available route. [By B. Reznik, staff correspondent] [Text] [Moscow IZVESTIYA in Russian 9 Aug 86 p 2] 12912/12947

ORE CARRIER BORIS GORDEYEV LAUNCHED--(TASS, Nikolaev)--The ore carrier Boris Gordeyev has been launched from the wharf of the "Ocean" plant. On the first series-produced vessel of the improved draft, a more economical main engine with a displacement of 70,000 tons has been established. By means of the streamlined design of its hull and through the use of high-strength steels, its metal requirements have declined by 250 tons. In addition to ore, the new vessel can ship grain, coal and other granular freight. [Text] [Moscow VODNYY TRANSPORT in Russian 12 Aug 86 p 3] 12912/12947

NEW CASPIAN OIL TANKERS--(TASS)--The Caspian Shipping Company has added the "Hero of Gabibul Guseyn" tanker to its oil-loading fleet. The vessel, built on the wharf of the Bulgarian town of Barn, is high-speed, easy to navigate, and has a shallow draught, which allows it to travel on both seas and rivers. [Text] [Moscow SELSKAYA ZHIZN in Russian 14 Aug 86 p 1] The Caspian Shipping Company's oil-loading fleet has been supplemented by the addition of a new vessel, the "Hero of Claudiy Nazarov". This tanker was built in Volgograd and has a loading capacity of 4,600 tons. Its shallow draught allows it to travel not only on seas but also on inland waterways. The loading tanks are separated from the ballast tanks, which prevents residual

fuel from spilling overboard. A large portion of the petroleum products produced in Azerbaijan are shipped outside the republic by the Caspian sailors. The accelerated development of the oil-refining industry is also helping enlarge the shipping company's tanker fleet. [Text] [Baku BAKINSKIY RABOCHIY in Russian 7 Aug 86 p 1] 12912/12947

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